AN OIL BURNER FOR YOUR HOME?

AUGUST 1958 • 40 CENTS

Consumer BULLETIN

The Original Consumer Information Magazine
Testing and Reporting on Products since 1928

REFRIGERATOR-FREEZERS

COFFEE
Canned, bean, or instant?

Electronic organs

Projecting color slides

Man's wash-and-wear suit

COMPLETE CONTENTS ON PAGE 3

Preventing gas explosions

Ratings of Motion Pictures

Phonograph Records

Portable dishwasher

PUBLISHED BY CONSUMERS' RESEARCH, INC.,
WASHINGTON, NEW JERSEY

Guarding the home against fires and explosions due to gas

Gas presents many dangers, often unsuspected by the consumer. Certain safeguards can help to keep the hazards at a minimum.

IN THE WORDS of the New York State Public Service Commission, "No safety device, no matter how modern in design, is an absolute guarantee that no explosion of gas will occur when there is a leakage of gas in quantity. However, the possibility of such an explosion can be reduced."

In order to determine just how this reduction can be effected, it is first necessary to examine the basic causes for fires and explosions due to "city gas" and bottled gas. Aside from outright neglect and carelessness in the maintenance and use of gas piping and appliances, a very substantial percentage of such occurrences can be traced to:

1. The entrance or seepage of escaped gas from outside the home into the basement or under the house (see Figure 4, page 29), or

2. Leaks in gas piping, valves, and appliances caused by excess pressure in the gas supply system.

Underground gas leaks

The principal causes of underground leaks are: gas pipe breaks caused by frost, vibration, overhead pressure, settlement, tree roots, etc. (42%); lack of regular inspection by the utility (20%); failure to protect pipes during new construction (17%); delays in repairing leaks (4%); and inadequate testing (4%).

Leaks through and around pipes

The American Gas Association is aware that gas leaking from any sources outside the building can enter it through or along pipes of several kinds including telephone conduits, sewers and untrapped drains, and similar underground paths.

A recommended method of minimizing this hazard is to install vents to the atmosphere around all service piping before it enters the house (see Figure 3 on page 28).

The danger inherent in the possibility that gas might at some time be delivered at a pressure far above the normal of about 6 inches of water column can be reduced by providing an oil-filled trap (see Figure 1) in the entering gas service pipe. Your gas company will know what depth of oil is necessary, to allow, with a safe margin, for the maximum gas pressures on their lines.

Following publication of an article "Is Your Gas Piping Safe?" in the October 1957 Bulletin, a number of subscribers wrote to Consumers' Research requesting information on ways by which they might be able to reduce hazards involved in the use of city gas and bottled gas. The accompanying article describes briefly the more important measures which the householder can and may wish to take to minimize the danger inherent in piping carrying gas into his home for use as fuel for heating and cooking, and hazards due to the presence of gas distribution piping near by. One cannot overstate the terrible damage to homes and the loss of life that may follow an unsuspected leakage of city or bottled gas into a house. News items partially reproduced in the October 1957 Bulletin, and pictures accompanying that article, showed a very few of hundreds of instances of destruction of homes that have occurred by fire and explosion.

Gas traveling through soil

Escaping gas may not only travel through or along service pipes, but in many instances has traveled up to 200 feet through the soil itself. This type of leakage may easily occur if the ground is of the loose-fill type; any solid cover, such as macadam, concrete, even a frozen surface, tends to extend the distance leaking gas can travel underground. In many instances serious damage and loss of lives by fire or explosion have occurred in homes which did not even have gas piping and gas appliances.

To prevent the entrance into the house of gas leaking underground at some point near the house is usually difficult, but it is important. One

(*Continued on page 27*)

The Consumers' Observation Post

HOT WEATHER BRINGS SPECIAL EATING PROBLEMS for children in some cases. Poor appetites and faulty eating habits may result from uncontrolled use of cold, high-caloric drinks or foods, such as peanut butter and ice cream, according to Dr. Floyd A. Norman and Dr. Edward L. Pratt of Dallas, Texas. The doctors suggest that, for the most part, water should be the liquid used to quench thirst. They recommend vigorous outdoor activity and report that a new type of health problem has arisen in the increased number of pale, flabby, tired children who have gained excessive weight during warm weather because they have stayed indoors in an air-conditioned house watching television and indulging in frequent between-meal snacks that have spoiled their appetites for well-balanced meals.

* * *

LONG DISTANCE TRAVELERS BY CAR who listen to their automobile radios often tune in local stations because these usually come in without static. Unfortunately, such stations as a rule do not give their location, city and state. That is the complaint of an advertising man who points out that in these days of turnpikes, throughways, and super-highways the best reception is often from a local station, and it would be nice to know what part of the country was coming in on the dial, particularly when weather reports are being given.

* * *

PROPER BREWING is essential in preparing "a good cup of coffee." The technique, outlined by the Coffee Brewing Institute, calls for the use of freshly ground coffee and boiling water that is poured evenly over the ground coffee. The fineness of the grind is an important factor, since too-fine a grind for the type of coffee maker used will produce bitter coffee as well as too much sediment; a grind that is too coarse results in a weak beverage (and uneconomical use of the ground coffee). The grind determines the length of time that the water and coffee should be together: 2 to 4 minutes for fine or vacuum; 4 to 6 minutes for drip; and 6 to 8 minutes for regular grind. For best flavor and aroma, brewed coffee should be served as soon as possible after it is made. It should be held not longer than one hour. The Institute recommends storing ground coffee in a cool, dry place since heat and moisture cause it to stale rapidly. It should also be kept away from pungent smelling foods for it picks up odors very quickly. Plan to use ground coffee within a week.

* * *

AS SMALL CARS INCREASE IN POPULARITY, Detroit's manufacturers are looking into the matter of building small cars in the U. S. General Motors is reported to be considering a 4-cylinder, 60 to 70 horsepower engine with a 100-102 inch wheelbase. Ford is working on a 4-cylinder engine with 100 horsepower, modeled after the 4-passenger 1958 Thunderbird. The price tags are expected to be around $1800. The big question holding up production seems to be whether consumers are going to continue to want small, economical automobiles.

* * *

NYLON AND PIMA FABRICS or nylon-cotton fabrics are quite fashionable. They have a silky, shiny appearance, but require more careful handling in laundering than an all-cotton fabric. The American Institute of Laundering points out that nylon cannot withstand high temperature ironing, and the combination fabric will be damaged when it comes in contact with a hot iron set at a cotton-linen setting. The effect in such cases will be similar to that of a fabric that has suffered multiple cuts by a sharp instrument. Such garments need a label that carries information about the fiber content and ironing temperature to serve as a guide for the proper care required in laundering.

DISCOUNT HOUSES ARE FOR THE "EXPERTS" as a rule—as we have pointed out before. In a recent photographic trade journal, a letter to the editor reports an experience of a man who went into a discount house to ask for a single-lens reflex camera. The clerk replied he didn't know anything about cameras and called another man who presumably was better acquainted with the camera line. When asked the same question, the second clerk suggested an Argus C-3. When the inquirer pointed out that Argus didn't make a single-lens reflex, he suggested a Leica. As the informed photographic amateur knows, neither one of these makes is a single-lens reflex.

* * *

INADEQUATE PERFORMANCE OF WINDSHIELD WIPERS is often due to soft, floppy blades. One CR subscriber complains that double-curved, wrap-around windshields can't take the solid-backed wiper blades that usually kept the windshield clear on earlier model cars. Some of the newest model automobiles never have a clear windshield in rain or snow because of their design which makes clean wiping almost impossible.

* * *

USED CAR WARRANTIES that have been making an appearance in a number of sections of the country are a boon to the average purchaser. The auto warranty company inspects and guarantees used cars against mechanical ailments for a given period after they are purchased. Used car dealers pay around $40 a car for the warranty and charge the car buyers $50 or more. Some of the authorities, however, take the view that the auto warranty business is essentially an insurance proposition. In California, for example, an attorney general's opinion has provided backing for a move by the insurance department to put such companies under insurance code regulations. In New York State, on the other hand, an attorney general's ruling, contrary to the one in California, has blocked the State Insurance Department from moving to bring warranty firms under its system of regulations. The leading auto warranty companies, including National Bonded Cars, Inc., Car Warranty Corp., an affiliated company of CIT Finance Corp., and Auto Warranty Co., are preparing for a court battle against the California decision.

* * *

ARTIFICIALLY-FED INFANTS may be getting too much vitamin D. There is such a wide range of sensitivity to this vitamin that some British pediatricians believe it may account for certain infant illnesses. In Great Britain, it has been suggested that steps be taken to provide safeguards against unnecessarily high vitamin intake and to set maximum as well as minimum levels on fortification of milk and cereals. It appears that some infants may get as much as 10 times their requirements.

* * *

FLOOR COVERING MATERIALS, including solid sheet vinyls, rubber tiles, vinyl asbestos tiles, linoleum, cork, and asphalt tiles, were given accelerated wear tests in a study made by the Department of Agricultural Engineering of the Texas Agricultural Experiment Station. At the conclusion of the test, there were significant differences in appearance among the various types of covering materials. The solid sheet vinyls and rubber tiles showed less wear than asphalt tiles, vinyl asbestos tiles, linoleum, and cork. Asphalt tile showed significantly more wear than the other floor covering materials tested. Asphalt tiles also tended to wear more when maintained by waxing than when not maintained. Although waxing might be considered desirable on all materials to maintain appearance, it was considered effective in decreasing wear only on linoleum and cork. Unmaintained rubber tiles, solid vinyls, and vinyl asbestos tiles showed less wear than maintained samples of these materials. With the exception of rubber tile, light solid or light mottled colors showed less change in appearance than dark solid or dark mottled floor coverings. In rubber tile, dark colors showed the least change in appearance.

(The continuation of this section is on page 33)

Consumer Bulletin

THE ORIGINAL CONSUMER INFORMATION MAGAZINE

Consumers' Research is a non-profit institution. It is organized and operates as a scientific, technical, and educational service for consumers. The organization has no support from business or industry. Its funds come solely from the ultimate consumers who read Consumers' Research Bulletins.

Scientific and technical staff, editors, and associates: F. J. Schlink, R. Joyce, D. C. Aten, M. C. Phillips, Erma A. Hinek, F. X. Hinek, Donald M. Berk, and A. R. Greenleaf. Editorial Assistants: Mary F. Roberts, B. Beam, and Ellen J. Snyder. Business Manager: C. D. Cornish.

Consumer Bulletin is issued monthly by Consumers' Research, Inc., at Washington, N.J. Copyright, 1958, by Consumers' Research, Inc., Washington, N. J.; all rights reserved. Subscription price (12 issues), $5 per year, U.S.A. (Canada and foreign, $5.20). For libraries, schools, and colleges, a special subscription of nine monthly Bulletins (October-June, inclusive) is available at $3; Canada and foreign, $3.20.

When asking for a change of address, the subscriber should give the old address as well as the new one. Be sure to include a postal zone number if your city has been zoned. Allow five weeks for the change to become effective.

Responsibility for all specific statements of fact or opinion at any time made by Consumers' Research lies wholly with the technical director and staff of the organization.

Note: Consumers' Research does not permit the use of any of the material in its Bulletin for any sales promotion, publicity, advertising, or other commercial purposes. Application for permission to reprint for other purposes should be made by letter to Consumers' Research, Washington, N.J.

Listings usually are arranged in alphabetical order by brand name (not in order of merit) under each quality or performance rating. A numeral 1, 2, or 3 at the end of a listing indicates relative price, 1 being low, 3 high. Where the 1, 2, 3 price ratings are given, brands in the 1, or least expensive group, are listed alphabetically, followed by brands in price group 2, also in alphabetical order, etc. A quality judgment is wholly independent of price.

Entered as second-class matter, November 9, 1934, at the Post Office at Washington, N. J., under the Act of March 3, 1879; additional entry at Easton, Pa. Printed in U.S.A.

VOL. 41, NO. 8 CONTENTS AUGUST 1958

Guarding the home against fires and explosions due to gas 2

Gas presents many dangers, often unsuspected by the consumer. Certain safeguards can help to keep the hazards at a minimum.

Combination refrigerator-freezers 6

Consumers' Research tests nine brands.

Which kind of coffee, for good flavor and aroma?—*James Driver* 13

Vacuum pack, store grind, grind your own, or soluble? The truth about American coffee and what happened to its quality.

A man's wash-and-wear suit 15

Consumers' Research tries one for size, washability, and serviceability.

Projection of color slides 16

The problem of shifting of focus.

Chico Portomatic—a low-priced dishwasher 17

Electronic organs for churches 19

How to avoid being gypped when buying a car 22

Advice on removing ink stains from fabrics 22

Domestic oil burners 23

Ratings of the popular high-pressure atomizing burners.

FEATURES

The Consumers' Observation Post 3

Off the editor's chest—The high cost of living 30

Ratings of Motion Pictures 31

Phonograph Records—*Walter F. Grueninger* 35

Cover photograph of the refrigerator, Kelvinator Div., American Motors Corp.

Norge

Amana

Kelvinator

Combination refrigerator-freezers

THE SALES of refrigerators have slumped considerably compared with sales in 1957 (the decline has been as much as 30 percent in some parts of the country). Part of the falling off in refrigerator sales may be due to the increase in popularity of frozen foods and the housewife's realization that most of today's refrigerators do not give nearly as low temperatures in their freezer compartments as are required for satisfactory storage of frozen foods, for more than a few days. Thus the refrigerator manufacturers have put the homemaker in a position where, willy-nilly, she must buy a refrigerator-freezer (or a freezer) rather than a regular refrigerator, if she desires to keep frozen foods for use several months or a month or so after their purchase. Temperatures in the freezing compartments of refrigerators commonly are much too high; they are likely to run as high as 20 degrees Fahrenheit, or even higher, in the hottest weather, much too high for storage of frozen foods except for short periods of a few days. Meat, for example, if kept at zero degrees will retain its original flavor for about two months; at 10 degrees meat starts to lose flavor after one month, and at 20 degrees after about 10 days. Frozen peaches will keep two years or more at zero degrees, but at 20 degrees they begin to turn brown and deteriorate in other ways *after only about four days' storage.*

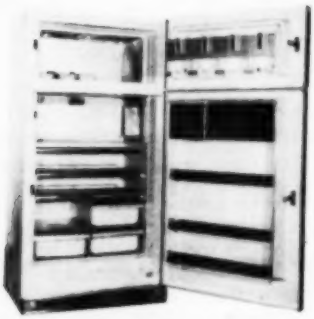
The fact that a package is frozen solid and feels hard is no indication whatever that the freezer chamber of the refrigerator is operating at the correct temperature. Meat, for example, begins to freeze at 29°F and, if stored at that temperature, will appear to be solidly frozen, but actually only about 40 percent of the moisture in the muscle fiber will be frozen and even at 15 to 20 degrees only about 90 percent of the moisture in the meat will be frozen. This unfrozen moisture causes the meat to exhibit an unpleasant dark color, when it is defrosted, and it will be of an unappetizing character when it is cooked.

Combination refrigerator-freezers have acquired their popularity because they have large freezer compartments which, in the better appliances, can be maintained at temperatures close to zero degrees. Unfortunately, the temperatures in the food chamber and in the freezer chamber are closely related due to the design of the appliance, and on this account getting a low temperature in the freezer chamber will sometimes mean that the temperature in the refrigerator section will be far too low. Adequate refrigeration is obtained at 39 or even 43 degrees in the food chamber, and running the refrigerator section at a lower temperature than this to get temperatures close to zero degrees in the freezer chamber has the effect of increasing operating costs without any corresponding advantages. Too low temperatures in the refrigerator section are also undesirable because of the possibility of the contents freezing, e.g., soft drinks, milk, etc. (Bottles of soft drinks that have become frozen present an explosion hazard—see CONSUMER BULLETIN for Aug. '56.)

The basic difference between a refrigerator and a refrigerator-freezer is that in the refrigerator air can circulate around the freezer space; in the refrigerator-freezer, the freezer space will usually be larger and will be completely separate and sealed off from the food storage chamber and its temperature will be 5°F or lower.

Because there is no clear nomenclature to differentiate a refrigerator from combination refrigerator-freezer, many consumers have purchased a refrigerator with an across-the-top freezer space, believing they were obtaining an appliance that would provide proper freezer temperatures to store food satisfactorily without loss of flavor or quality.

Of the brands included by Consumers' Research in this test, only the *General Electric* carried the term "combination" on the name plate; the



Admiral

Frigidaire

Westinghouse

Amana name plate stated Freezer plus Refrigerator, and the *Admiral* was called *Dual-Temp*. The *Dual-Temp* name, however, is not a clear indication that the appliance is a combination refrigerator-freezer, for, of course, every refrigerator is a "dual-temp" in the sense that it has lower temperatures in the chamber where the ice cubes are made than in the chamber where the food is stored.

Features of the new models

All of the models now have safety latches (as required by law) which do not require turning a handle or pushing a knob on the outside to open the door. Some have magnetic latches, others a simple mechanical latch, but all can be opened from the inside or outside by merely pushing or pulling on the door. All met the government regulation requirement of not over 15 pounds of pulling force to open the door except *Norge* which required 18 pounds. On some makes, the condenser has been removed from the back of the box to another location to permit the box to be placed close to the wall. A new type of door hinge used on some makes operates so that when the door is opened 90 degrees the front of the door is in line with the side of the box, making an extra clearance distance unnecessary; this feature is an advantage, particularly if the box is to be built in, or set close to other equipment.

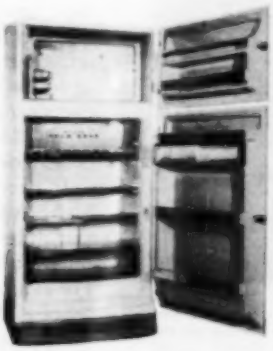
We are glad to note that the interior lighting of refrigerators and refrigerator-freezers has been improved, that plastics are not used to such great extent as formerly, and that the plastics that are used are generally of less flimsy design.

Automatic defrosting

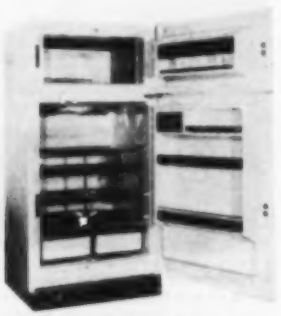
In each of the combination units tested, the refrigerator section is cooled by a refrigerated plate, coil, or finned coil which automatically defrosts at the end of each refrigeration cycle; the defrost water is drained to a tray in the base of the machine compartment and evaporated. The *Westinghouse* differs from the other makes in that the coil is not located in the fresh food compartment but between the inner and outer rear wall of the appliance. A small built-in fan which operates continuously except when the door is open circulates the air from the refrigerator space over the cooling coil.

None of the models had provision for automatically defrosting the freezer; frost removal must be done manually, using a scraper, or by turning the current off and using pans of hot water to melt the frost. The matter, however, is not considered important as collection of frost on the inside of the freezer is usually rather slow and defrosting would be necessary only a few times per year. The *Admiral*, *Frigidaire*, *General Electric*, and *Westinghouse* had drain plugs in their

RCA Whirlpool



Philco



General Electric

Make	Number of hours required to reduce temperature in food storage compartment to 46°F	Ice cubes, lb.	Ice-making test, hr. per lb. of ice cubes
Admiral M-1475	6.1	4.4	0.7
Amana FPR-14B	2.4	7.4	0.5
Frigidaire FI-122-58	5.3	4.8	0.7
General Electric BH-12-RD1	3.4	4.3	0.7
Kelvinator K-75H-13	3.4	3.1	0.7
Norge C-1358	4.0	1.0	3.3
Philco RD 1485	6.6	4.8	0.7
RCA Whirlpool ES-12T-O	4.7	4.5	0.6
Westinghouse TDL-12L	3.2	2.4	1.00

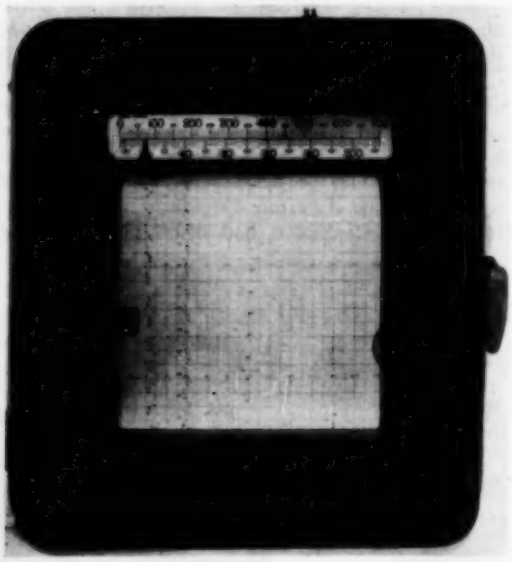
Table I

Table showing time required for the various refrigerator-freezer combinations to be "pulled down" in temperature from 110°F (room temperature, outside and, at start, inside of box) to 46°. A short pull-down time indicates good reserve capacity and ability to deal with exceptional conditions.

freezers to facilitate the disposal of defrost water when the hot-water method is used. Frigidaire have very recently announced a new model (not yet tested by Consumers' Research) which is said to eliminate the problem of defrosting of the freezer space.

Prices

The suggested retail prices for the combination units tested ranged from $400 to $650. As two of the large mail-order houses are offering combinations very similar to those which the manufacturers of the same appliances are offering under their own names at $120 and $150 higher prices, it is evident that the higher prices quoted include a liberal markup to permit the dealer to give a generous trade-in allowance for the old box. Where no trade-in is involved, it should be possible to obtain a really substantial discount from the prices named. Bear in mind that if you do not ask for a discount you very likely will not get it. It is wise to assume that the so-called list price is not the actual selling price, and one will do well to shop around for the best price available, especially in a city where there are a number of competing dealers. Dealers in appliances nowadays have one set of prices for those who expect to pay full price and one for others who shop around and are likely to buy from the dealer who offers them the best deal.



A continuous permanent record of the temperatures in different parts of the freezer and refrigerator spaces are recorded on the chart of the thermocouple temperature recorder (shown above) over a 24-hour period.

Cost of operation

It may be assumed, that cost of operation of the average refrigerator-freezer will be close to the results obtained in a test at a room temperature of 80 degrees. Estimated operating costs at a room temperature of 80 degrees, determined by calculation, are given in Table 2, page 9. If there is a considerable "food load," which implies that the refrigerator from time to time receives quantities of foods that are warm or at room temperature, the energy consumed by the refrigerator in 24 hours *at a room temperature of 90 degrees* will more closely determine the operating cost.

In determining whether costs of operation were high, average, or low, allowances were made for the differences in volumes of freezer space and refrigerator space in the various models tested. For example, *Amana* with 6.3 cubic feet of freezer space and 7.5 cubic feet of refrigerator space costs more to operate per month than the *GE* with 2.1 cubic feet of freezer space and 9.4 cubic feet of

refrigerator space, but calculated to a common basis of comparable volumes (allowing for the difference between costs of refrigerating and of freezing), the *Amana* is more economical to operate when its large freezer space will be effectively used.

* * *

All the meat drawers gave temperatures too high for the satisfactory short-time storage of fresh meat (and fish, poultry, and meat salads) which should not freeze but should be stored at a temperature very close to the freezing point (yet not below it). A refrigerator is much better than a combination refrigerator-freezer in this respect because its meat drawer is unusually located close to the freezer or evaporator which is not insulated from the refrigerator compartment, and so provides lower temperatures for meat.

Of the combinations tested, *Amana* was by far the most convenient from the standpoint of ready access to the shelves; next in this respect were *Norge*, *Kelvinator*, *Philco*, *Frigidaire*, and *Westinghouse*. *Admiral*, *General Electric*, and *RCA Whirlpool* were poor in this respect.

A. Recommended

Amana FPR-14B (Amana Refrigeration Inc., Amana, Iowa) $650. Cabinet was of flush-back design permitting installation of the appliance close to the wall. Refrigerator space was very well arranged, but its 7.5 cu. ft. regular food storage space was considered small for some families (next larger size has 8.7 cu. ft. of refrigerator space). Time required to lower temperature from 110° to 46°, best (shortest time) of all brands tested. Operating cost, about average. Although average air temperature in the freezer was a little too high, the temperature of the frozen food, which was somewhat lower, was satisfactory. The *Amana* had its refrigerator space at the top, and was considered the most convenient to use of the refrigerator-freezers tested; no stooping was required for access to refrigerator space, which is most frequently used by far. Storage arrangement in both doors was good; egg tray was removable. The interior of the appliance was judged easy to clean.

Kelvinator, Model K-75H-13 (Kelvinator Div., American Motors Corp., Detroit 32) $400. Single-door type with interior door for freezer. Door had hinges of a new type, permitting installation close to adjoining cabinets. Time required to lower temperature from 110° to 46°, less than average. Operating cost, low (very good in this respect). Refrigerator space arrangement was fairly good, although shelves were not adjustable. Vegetable drawers and supports could be removed if desired to provide space for very large items. No meat drawer was provided. Sliding shelves had a limited movement (6 in.). Storage arrangements in door were good, but the shelves were not adjustable. Egg trays were removable. No shelves were provided for ice-cube trays; some would consider the lack a disadvantage. The interior of the appliance was judged easy to clean.

Leonard, Model L 75H-13 (Leonard Appliances, American Motors Corp., Detroit) $400. Same as *Kelvinator K-75H-13*.

Table II

A comparison of estimated monthly operating costs of nine 1958 refrigerator-freezer combinations tested by CR. The electric rate is assumed to be 3½ cents per kilowatt-hour.

Make	*List price, $*	*Total rated storage capacity, cu. ft.*	*Estimated monthly operating cost at room temperatures of* 80° *Cost, $*	90° *Cost, $*	*Percent running time*	*Average air temperature in freezer, degrees*
Admiral M-1475	530	13.2	3.30	4.40	64	−2.0
Amana FPR-14B	650	13.8	3.40	4.50	57	+5.5*
Frigidaire FI-122-58	470	12.2	2.40	3.20	54	+9.5**
General Electric BH-12-RD1	470	11.5	2.75	3.65	54	+1.0
Kelvinator K-75H-13	400	12.7	1.40	1.90	39	+1.5
Norge C-1358	470	13.2	2.30	3.10	49	−3.0
Philco RD 1485	490	13.0	3.15	4.20	73	+3.0
RCA Whirlpool ES-12T-O	440	11.6	2.40	3.20	60	+5.5*
Westinghouse TDL-12L	490	12.1	2.15	2.85	40	+7.0†

* Average temperature of frozen food, +3°. ** Average temperature of frozen food, +8.5°. † Average temperature of frozen food, +6°.

Table III—Physical characteristics of

	Admiral Imperial Dual-Temp M-1475	Amana FPR-14B	Frigidaire Imperial FI-122-58	General Electric BH-12-RD1	Kelvinator K-75H-13
Dimensions					
Total volume (mfr.'s rating), cu. ft.	13.2	13.8	12.2	11.5	12.7
Height, width, depth, in.	64 x 32 x 25.6	67.6 x 32 x 26.8	64 x 32 x 28.4	61 x 30.5 x 26.1	63 x 31 x 30.8
Freezer section					
Capacity, cu. ft. (actual)	2.8	6.3	2.45	2.1	2.0
Location	Top	Bottom	Top	Top	Top
Arrangement	No shelves or dividers. Heavy plastic dispenser racks for packages and cans in door.	3 refrigerated shelves. Compartment for ice cream, etc. 2 fixed shelves and dispenser in door.	2 removable shelves for ice-cube trays. 1 fixed shelf in door.	No shelves or dividers. Dispenser in door.	Interior door. No shelves or dividers.
Ice-cube trays	3 quick release	4 quick release; one of these was double size.	3 quick release	3 quick release	2 quick release
Refrigerator section					
Volume, cu. ft.**	10.4	7.5	9.75	9.4	10.7
Shelf area, sq. ft.	17.4	22.2	16.3	17.7	15.4
No. of shelves and type	2 fixed, 2 sliding, all non-adjustable	1 two-third size fixed, 2 half-size fixed, 2 sliding, all non-adjustable	1 fixed, 2 half shelves, fixed, 2 sliding, all non-adjustable	Racks for 2 large bottles, 3 revolving adjustable, 1 fixed	2 sliding, 1½ fixed, all non-adjustable
Meat drawer	Yes, metal with plastic lid	Yes, plastic	Yes, plastic	No	No
Crisper or vegetable drawers	2 half-width metal	1 half-width metal	2 half-width metal	2 half-width metal	2 half-width plastic, 1 full-width fruit basket
Shelves in door	2 adjustable 1 fixed	1 fixed 4 half-size removable	2 fixed	2 adjustable	3 fixed
Butter compartment	Yes	Yes (heated)	Yes	Yes	Yes
Cheese compartment	Yes	Yes	Yes	No	Yes
Egg trays and capacity in number of eggs	2 removable, drop-down type—14	Swing-out type, removable—12	2 removable—14	Fixed position—12	Removable—24
Defrosting in refrigerator†	Plate-type, automatic	Fin-type, automatic	Plate-type, automatic	Coil-type, automatic	Plate-type, automatic

* Not including semiautomatic ice maker which takes 0.7 cu. ft.
† Not including ice-cube server which takes 0.4 cu. ft. of space.

Norge Customatic, Model C-1358 (Norge Sales Corp., Div. Borg-Warner Corp., Chicago 54) $470. Single-door type with interior door for freezer. Door had hinges of a new type permitting installation of the refrigerator-freezer close to adjoining cabinets. Time required to lower temperature from 110° to 46°, about average. Operating cost, less than average (good). Swing-out shelves and vegetable drawer in refrigerator wasted some space but were judged very convenient. One of the two fixed-position shelves could be removed to permit storage of very large items. Storage compartments in the door were well arranged; two of the door shelves were adjustable. Egg trays were removable. There were very sharp pointed handles on the crisper, the freezer door, and on the doors of egg and cheese compartments. These designs were considered unsafe. The semiautomatic ice maker must be filled manually with water from a plastic container. It operated satisfactorily, but this device has the disadvantage of taking up almost one third of the freezer space. The interior of the appliance was judged somewhat difficult to clean.

B. Intermediate

Admiral Imperial Dual-Temp, Model M-1475 (Admiral Corp., Chicago 47) $530. Cabinet was of flush-back design and door hinges were of a new type permitting installation close to the wall and adjoining cabinets.

nine 1958 refrigerator-freezer combinations

Norge Customatic C-1358	Philco RD 1485	RCA Whirlpool ES-12T-O	Westinghouse Imperial Frost Free TDL-12L	
				Dimensions
13.2	13.0	11.6	12.1	Total volume (mfr.'s rating), cu. ft.
64.5 x 31 x 27.5	67.9 x 31.6 x 30.6	59 x 30.8 x 32.3	64.3 x 30 x 29	Height, width, depth, in.
				Freezer section
1.6*	3.2	2.9	2.5†	Capacity, cu. ft. (actual)
Top	Top	Top	Top	Location
Interior door. No shelves or dividers.	2 small shelves for ice-cube trays. 2 fixed shelves in door.	1 full-width refrigerated shelf. 2 full-width shelves in door.	No shelves or dividers. Dispenser in door.	Arrangement
Ice-cube maker	3 quick release	3 quick release	2, plus ice ejector	Ice-cube trays
				Refrigerator section
10.9	9.8	8.7	9.2	Volume, cu. ft.**
17.0	15.7	12.9	15.1	Shelf area, sq. ft.
2 swing-out adjustable, 2 fixed	1 sliding shelf, adjustable, 1 adjustable, 1 fixed shelf, 1 folding shelf	1 sliding, 1 fixed, 2 half shelves, all non-adjustable	3 sliding adjustable, 1 fixed	No. of shelves and type
Yes, plastic	No	Yes, plastic	Yes, metal	Meat drawer
1 full-width swing out, plastic	1 full-width metal with plastic front	2 half-width metal	2 half-width metal	Crisper or vegetable drawers
2 adjustable, 3 fixed	2 fixed	2 fixed	1 full-width, 2 half-width, all non-adjustable 2 removable containers	Shelves in door
Yes	Yes	Yes	Yes	Butter compartment
Yes	Yes	No	Yes	Cheese compartment
2 removable—16	2 removable—24	Fixed position—16	3 removable drop-down drawers—18	Egg trays and capacity in number of eggs
Plate-type, automatic	Coil-type, automatic	Coil-type, automatic	Fan circulates air over concealed plate	Defrosting in refrigerator‡

** Total, less freezer space (see footnotes * and †).
‡ Manual *in the freezer* in all cases.

Time required to lower temperature from 110° to 46°, longer than average. Operating cost, highest (with *GE* and *Philco*) of all tested. Arrangement of space in refrigerator was fairly good. (Would have been judged good had shelves been adjustable.) There was ample space for large items. Sliding shelves did not operate as smoothly as desirable, and to pull them out the maximum distance, it was necessary to open the door beyond a 90-degree angle. Storage arrangement in doors was in general good except that frozen juice cans of some common sizes could not be easily removed from the dispenser. No shelves were provided in the freezer for ice-cube trays. The interior of the appliance was judged easy to clean except for grooved trim on shelves.

Coldspot (Sears-Roebuck's Cat. No. 46—8220) $320, plus freight. See *RCA Whirlpool Model ES-12T-0*, which is very similar.

Frigidaire Imperial, Model FI-122-58 (Frigidaire Div., General Motors Corp., Dayton 1, Ohio) $470. Time required to lower temperature from 110° to 46°, longer than average. Operating cost, about average. Average temperature of freezer air was about 10°, too high, and temperature of frozen food exceeded CR's recommended upper allowable limit of +5°. With the control set on No. 1, which the instruction book designates as a normal setting, temperatures in the refrigerator section ranged from 37.5 to 27.5° but liquids did not freeze and the

average frozen food temperature was 8.5° (too high). At lower settings satisfactory freezer temperatures were obtained but refrigerator temperatures were then low enough to freeze liquids (very undesirable). Refrigerator space arrangement was fairly good. Would have been better if shelves had been adjustable in position. Large items could be stored by removing meat drawer and its supports. Storage arrangements in doors, good. Egg trays could be removed and space used as extra door shelf, if desired. The *Frigidaire* had removable shelves in freezer for ice-cube trays (desirable). ¶*Model FD-122-58* at $440 is essentially the same except for minor differences in trim, number of ice trays, no meat drawer, etc.

General Electric BH-12-RD1 (General Electric Co., Appliance Park, Louisville 1, Ky.) $470. Cabinet was of flush-back design and door hinges were of new type permitting installation close to wall and adjoining cabinets. Time required to lower temperature from 110° to 46°, less than average. Cost of operation, highest (with *Admiral* and *Philco*) of all tested. Insulation in freezer section was poorly sealed and, because of the imperfect sealing, particles of the glass wool insulation dropped into the freezer space (very undesirable). The revolving-type shelves, which were adjustable in height, were judged very convenient, although they wasted some space. They were, however, more difficult to clean than the customary type of shelf. There was ample room in the refrigerator for storage of a large item such as a turkey. Storage arrangement in the doors was good except that egg trays were not removable and space available was somewhat limited. The *GE* was the only box that had door checks to prevent the door from opening too far; these are considered to be a very good feature. No meat drawer was provided. No shelves were provided for the ice trays in the freezer, which some may consider a disadvantage.

Montgomery Ward's (Cat. No. 69—1388) $340, plus freight. Essentially similar to *Westinghouse TDL-12L*.

Philco RD 1485 (Philco Corp., Philadelphia) $490. Time required to lower temperature from 110° to 46°, longest of all models tested. Cost of operation, highest (with *Admiral* and *General Electric*) of all tested. Arrangement of interior of refrigerator space was good except that the full-width vegetable crisper was not as convenient to use as two half-width crispers. No meat drawer was provided. Storage arrangements in doors were good, but shelves were not adjustable. Egg trays were removable. Ease of cleaning of the interior of the appliance was good.

RCA Whirlpool ES-12T-O (Whirlpool Corp., St. Joseph, Mich.) $440. Time required to lower temperature from 110° to 46°, about average. Operating cost, about average. Temperature of air in freezer space was somewhat high, but maximum temperature of frozen food was 3° which is satisfactory. Arrangement of refrigerator space was judged relatively poor because the shelf area was limited and the shelves not adjustable. This refrigerator-freezer was deemed the least desirable of the models tested. Space arrangement in door was judged good; the egg racks were not removable. Freezer compartment had shelf for ice-cube trays and for food packages.

Westinghouse, Model TDL-12L (Westinghouse Electric Corp., Columbus, Ohio) $490. Time required to lower temperature from 110° to 46°, shorter than average. Operating cost, average. Average air temperature in freezer was somewhat high, and maximum food temperature was 6°, somewhat higher than CR considers desirable. Space arrangement in both doors and refrigerator space was good. Stops on sliding shelves were not as positive as desirable; failure of the stop to work as expected could spill foods to the floor. Sliding shelves had a limited movement (6¼ in.). Drop-down egg trays were removable, but judged not as desirable in design as those used in some of the other brands tested. Ice-cube server operated satisfactorily, but had the disadvantage that it took up about 15% of the freezer space. The interior of the appliance was fairly easy to clean.

Emendations to Consumer Bulletin

An expert examines fresh-water spinning reels
Page 21, Apr. '58 Bulletin

The correct spelling of one of the spinning reels is *Alcedo* (not *Alecedo*).

Detergents
Page 28, Mar. '58 Bulletin

Breeze, an all-purpose synthetic detergent, listed as a light-duty detergent at the top of column 2, and under the head "Light-duty" near the middle of the column, should have been listed under the head "Heavy-duty" in both places.

Vim, listed near the top of the column and as a heavy-duty detergent in the ratings below, is no longer marketed by Lever Brothers Company.

Modern "high-speed" restaurants
Page 2, July '58 Bulletin

The restaurant picture should have been credited to Ewing Galloway.

Pumps for tropical fish aquariums
Page 15, Jan. '58 Bulletin

Metal Frame Silver Streak. Change the listing from *C. Not Recommended* to *B. Intermediate.* The motors from four additional *Silver Streak* pumps subsequently tested satisfactorily passed tests for electrical safety; it is believed that the defect in the original motor was an abnormal one and not typical of this pump generally.

Which kind of coffee, for good flavor and aroma?

BY JAMES DRIVER

COFFEE MEN refer to coffee as "The All-American Drink For All Americans," and this is close to a just appraisal, for coffee is served in 96 percent of the homes as well as in virtually all of the 500,000 eating places in the U.S. In dollars, coffee is the biggest single import into this country, and it is also by far the biggest export commodity and dollar-earner for Latin-America. Yet, in spite of this great commercial and international importance of coffee, it is not easy for the average consumer to get a good cup of really fresh coffee even in his own home.

The difficulty in finding good coffee is due in a large measure to the methods used in merchandising coffee. The small specialty shop where coffee is roasted fresh daily and even blended to suit individual tastes and preferences is a thing of the past in most areas of the U.S. The distribution of the commodity has fallen into the hands of larger and larger firms so that now a few giants, national advertisers and national distributors, control a tremendous segment of the entire business. (It is true that in certain parts of the country regional roasters have successfully challenged this supremacy of the national distributors, through a superior product or through regional loyalty to a particular type or flavor of coffee.)

The introduction of the vacuum pack has been the chief factor in erasing the specialty shop from the scene as well as in making the regional roaster conform to a pattern of grades and prices imposed by the standardizing influence of the large distributors. The vacuum can has won almost universal acceptance by the coffee industry as the best method of delivering ground coffee to the consumer, because it does a pretty good job of preserving flavor and aroma up to the time the can is opened. Deterioration is fairly rapid thereafter, and the average American housewife using vacuum-packed coffee is using stale coffee by the time she is working on the last half of a pound can. However, until fairly recently, she was quite sure of getting a good blend in a vacuum-packed brand.

Most packers of tinned coffee buy good, standard merchandise, the best they can get in the huge quantities required, and they bend their efforts toward making satisfactory blends. Nevertheless, the most casual glance at import statistics would reveal that consumers are not getting as good blends today as they did before the Korean War or even a couple of years ago, because the great increase in imports is from areas that produce inferior grades. This is not to say that the top vacuum-packed brands use these coffees. It indicates, rather, that the housewife has let price overrule her desire for quality or that she has lowered her sights in choosing flavor, a conjecture that is fully supported by the phenomenal increase in sales of soluble coffee.

Vacuum pack, or coffee in the bean?

Consumers must often ask themselves, "Would I be better off to buy a good vacuum-packed coffee or to grind the coffee I can get in the whole bean in the chain store?" The answer to that question

must be qualified in this way: *if* the store where you trade has a fast turnover of its whole-bean coffee and *if* the manager and the stock clerks know the difference between fresh and stale coffee—as many of their customers do not—and are careful to see that the shelves are filled with fresh merchandise, you will find both quality and economy in whole bean blends. Furthermore, if, instead of grinding the coffee at the store, you take it home in the bean and grind it as you use it, you would still further prevent staleness from robbing that last half pound of coffee of some of the good flavor it had when it tumbled from the roaster to the cooling pan at the plant.

You will be able to tell a good deal about the freshness of the coffee you buy in the bean by the quality and strength of the aroma when it is ground. There is no time in its history from the green bean to the cup that coffee gives off so fine an aroma (or gives itself away for lack of it) as when it is being ground. And don't mind the chaff you see in the coffee you grind at home or in the store. When the experts who blended your coffee tested it, they ground it and used it that same way, chaff and all. As a matter of fact, part of the reason you do not see chaff in your can of vacuum-packed coffee is that the coffee has taken such a beating in being driven through the grinders that a lot of the chaff, the "silverskin" of the coffee bean, has been so battered that it has absorbed oils and lost visibility by taking on some of the brown color of the ground particles. (Some experts think coffee tastes better when made from a grind in which the chaff shows.) The grind should be fairly clean and even; that is, there should not be too much very fine or powdered coffee mixed with the conventional granulation, but one shouldn't expect that all particles should be exactly the same size.

Some brand names are worthy of mention. The following brands of vacuum-pack coffee have been found to be consistently good in quality, and their manufacturers seem to keep their quality uniform: *Chase & Sanborn, Folger's, Hills Bros., Martinson's, Maxwell House,* and *Yuban.* Most of the whole-bean coffees sold to be ground at home or in the store are not available on a national basis. Exceptions are A & P and Safeway brands. Both *Bokar* (an A & P brand) and *Nob Hill* (a Safeway brand) are good coffees. *Eight O'Clock* and *Red Circle* (A & P) and *Airway* (Safeway) are good values for the money.

Soluble coffee

There can be little question but that soluble coffee has made a profound change in American coffee drinking habits and preferences. There are certainly some very strong arguments for the use of soluble or "instant" coffees. Easier to make, easier to clean up after, they fit into the modern picture of frozen foods, of pre-mixed foods, of heat-and-serve foods that have taken so much drudgery—and so much flavor and savor—out of the kitchen. The soluble coffees also have a longer shelf life than regular coffee and do not seem to deteriorate rapidly after the container is opened.

Early this year instant coffee makers added a touch to perk up sales. They added aroma. The manufacturers are all very secretive about how it is done and each claims a special process, but the aim of all is the same: to make instant coffee smell like regular coffee, especially when the container is first opened. Users of soluble coffee who have missed that good coffee aroma that is wafted out of a newly opened vacuum can may now have a share in that olfactory pleasure, though it is doubtful whether the new soluble coffee tastes better in the cup. However, instant coffees should not be condemned out-of-hand for their failure to make as good a cup of coffee as genuine fresh-ground coffee. The convenient soluble coffees make a usable beverage, even though it does not meet the gourmet's ideal of fine coffee flavor.

Whatever way you make coffee, whether by vacuum maker, drip method, infusion, percolation, or if you stir some soluble coffee in your cup, you will do well to follow a few simple rules, to insure consistent results in the cup. Keep your utensils meticulously clean, and, once you have decided on the strength you like best, make your coffee the same way every time, by careful measurement of both water and coffee. The Coffee Brewing Institute is right in its in-season and out-of-season insistence on cleanliness of equipment. Coffee is not easy to clean up after, but a clean pot to start with is a prerequisite to a good cup of hot coffee.

Since the Korean War, when raw coffee prices soared to almost twice their pre-Korean levels, both consumers and proprietors at public eating places have resorted to "stretching"—that is, trying to get more and more cups per pound of coffee.

A pound of good coffee should provide between 40 and 50 cups and *no more;* the ideal yield is about 46 cups, and coffee roasters who use the meaningless advertising comparative "more cups per pound" are in effect advising the consumer to make a weaker, less palatable beverage with use of their brands. Recent surveys indicate that Americans are now asking coffee to produce 60 or more cups per pound, and that is far too much. (See item on page 3, this issue.) This perhaps is the main reason why so many people say that "coffee isn't as good as it used to be."

A wash-and-wear suit

MEN'S WASH-AND-WEAR SUITS have been on the market for some three years now, and there is every indication that they will be selling in increasing numbers as the years go on. Merchants suspect that only a few of these suits ever see a washing machine, but their wrinkle-resistant, press-retention qualities are big factors in their favor, as is their light weight.

The summer suit that Consumers' Research had in its wash-and-wear pilot test this season was frankly not a dressy, all-occasion suit, but one designed for comfortable summer wear. It was made of a 77 percent *Dacron*, 23 percent cotton fabric, of a slightly nubby weave. It sold for $40 and was labeled as being either hand washable or machine washable.

Several interesting things came to light as the test of the suit progressed. The man who wore the garment was entirely satisfied with it. He found it comfortable, and considered its appearance far superior to that of his usual summer suits. Despite his high regard for the suit and his wearing of it whenever possible, this suit did have some faults in appearance, as the photograph shows. Seams were puckered as can be seen, especially the side seam of the trousers.

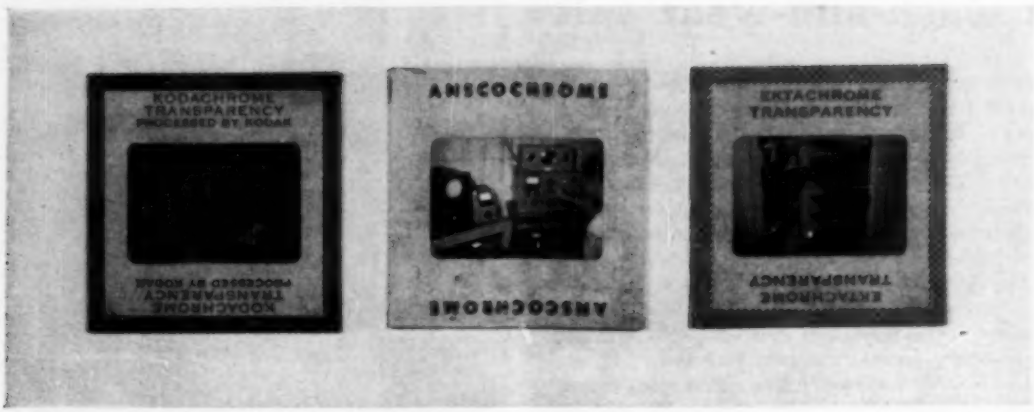
The other components of the suit—trimmings, zipper, and shoulder pads—gave no trouble. The suit jacket had a short shoulder lining of nylon, bound armholes, a faced front, strongly stitched buttonholes, and well-tailored trousers. The armhole area showed some puckering, common with jackets made of synthetic fabrics, but this puckering was not present to a degree that would be considered really objectionable. There was no noticeable shrinkage in any one of the ten measurements that were checked during the wear-and-wash test. The fabric did become faintly pinkish where it was exposed to the light.

The wearer of the suit and those who worked with it in the laboratory agreed that a little touch-up pressing was required after each washing to give the suit a first-rate appearance. Above all, it was evident that cleaning a suit of this type was not just a matter of throwing it into the washing machine. Stains, and collar and cuff lines had to be treated with soap or detergent before washing. Grease stains were sponged off with a dry-cleaning fluid before washing, and some stains were a little troublesome to remove. Manufacturers recommend that these suits should not be put in the machine with the regular wash, but washed separately to avoid crowding and the resulting wrinkling of the fabric.

One last word—hanging the suit up to dry will present problems if a suitable drying space is not available. In addition the wet suit should be straightened carefully on the hanger, and finger-pressed for best results. If you have an automatic dryer, use it, but be careful not to overdry. It is better if your dryer has a cooling-off period at the end of its cycle. Remove the suit from the dryer when the drying is finished—do not walk off and do something else—for unless the suit is hung on a hanger immediately, it will be wrinkled. On the other hand, touch-up pressing is easy to do, and not by any means a chore as ironing would be.

A. Recommended

Mirro Lite (Famous-Sternberg, Inc., 950 Poeyfarre St., New Orleans 5) $40. Gray "jacot" weave, *Dacron*-and-cotton man's summer suit. Proved satisfactory in CR's wash-and-wear test.



Projection of color slides

The problem of shifting of focus

THE "popping out of focus" of a slide that is projected can be very annoying both to the operator of the projector and to the audience. If this problem is one that bothers you, don't assume it's the fault of the projector (which may or may not be to blame). Popping is caused by the heat from the projection lamp evaporating the moisture that has been absorbed by the film. When this occurs, the film of the slide shifts suddenly into a different plane in relation to the cardboard mount and the picture on the screen is then out of focus. Popping out of focus is rarely a problem with slides that have been stored in a dry place and are then used in a projector in which the slides remain relatively cool. (In tests by Consumers' Research, slide temperatures of various projectors have been found over a wide range, from as low as 115°F to over 220°F.)

One manufacturer has solved this problem in his automatic slide projector by blowing some of the hot air from the projector lamp housing over the slides in the slide tray as they wait to be projected. (See listing of *Balomatic* in the July issue.) For the average user, the best solution to prevent or minimize slides' popping out of focus is to store the slides in a dry place and hold each one or the trayful as used in an automatic or semi-automatic projector over the lamp house (5 to 10 seconds at about 2 inches above the exhaust louvers) before they are projected. One should, if possible, use a projector which produces a relatively low temperature at the slide, as do the *Bell & Howell Headliner 706* and the *Kodak 300*.

Refocusing during projection may be necessary for another reason than scenes popping out of focus. When slides having different emulsions, e.g., *Kodachrome*, *Ektachrome*, and *Anscochrome*, are mixed for projection, it will often be necessary to refocus each time a slide is shown that has an emulsion different from that of the preceding slide. This is because color slides of different compositions and structure assume their own characteristic degrees of curvature or set (concave on the emulsion side) when mounted in cardboard, and consequently do not lie in the same plane.

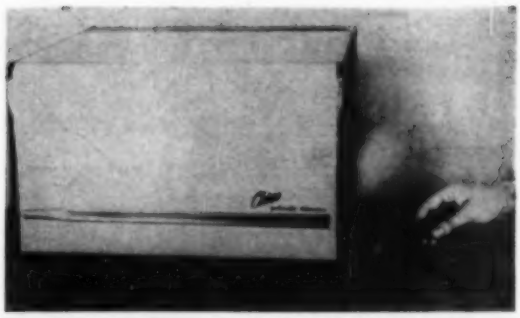
One solution of the problem is, of course, to use only one kind of color film or to keep all slides of the same type together. This is not always possible, for one often wants to use a particular sequence for showing pictures. Where slides of different types must be intermixed, the only sure solution is to remove the transparencies from their cardboard mounts and bind them in glass. Mounting in glass provides the maximum protection for slides, but it is costly, greatly increases the storage space required and the weight one must carry about, and has other disadvantages.

* * *

Eastman Kodak Co., Sales Service Div., Rochester 4, New York, has a free pamphlet available called Storage and Care of Kodak Color Films. This pamphlet contains much information of value to those who take and project color transparencies. Also free from Eastman Kodak Co. is a leaflet on mounting transparencies in glass.

Ansco, Binghamton, N.Y., offer How to Make Better Color Pictures, 75 cents, which contains excellent advice for those who use *Ansco* color films, and for amateur photographers generally.

Chico Portomatic—a low-priced dishwasher



The Chico Portomatic Dishwasher Model DW-B tested

ADVERTISED as "sensational". . ."unique". . ., "GUARANTEED TO WASH DISHES FASTER, EASIER, CLEANER than by hand," the *Chico Portomatic Dishwasher* appears at first glance to be an attractive buy at $59.95, considerably less than the price of any conventional dishwasher. But in tests at Consumers' Research, the *Chico* failed to wash dishes clean. As a matter of fact, in several years of testing and reporting on automatic dishwashers, Consumers' Research has yet to come across *any* machine that washes dishes cleaner than a careful housewife can do them by hand. The *Chico*, however, not only failed to reach the standard claimed in its advertising, but actually failed to wash dishes even as well as the least effective of the 12 conventional dishwashing machines of well-known makes reported on in the February 1958 CONSUMER BULLETIN.

Over the last decade, several small and relatively inexpensive portable dishwashers, somewhat similar to the *Chico*, have made their appearance, only to disappear from the market after a brief time. The failure of consumers to buy any large number of these small low-cost dishwashers has not been due to any lack of interest in a cheaper way to do the job, but rather has grown out of experience with the relatively poor or indifferent performance of these dishwashers in washing dishes, glasses, and tableware.

Actually, there might be a market for a relatively small, compact, portable dishwasher if it should prove to be possible to produce one that was nearly as effective as one of the larger machines. In homes or apartments where space does not suffice for a standard-size dishwasher, an inexpensive counter-top model that could do a good job of dishwashing would have a place. The *Chico DW-B* is not the answer to this need.

The *Chico* is a box-like unit neatly finished in gray and white enamel with an attached hose to be connected to the faucet of the kitchen sink. At one side is a small capped reservoir to be filled with a liquid detergent such as *Joy*. Water enters the interior of the appliance through holes in the ends of a tube which rotates and moves in such a way that three moving streams of water play over the soiled dishes in the rack. The energy to move the sprays about and drive the water against the dishes and other tableware is derived entirely from the pressure of the water as it enters from the faucet to which the hose of the machine is attached.

In a conventional electric-powered dishwasher, a relatively small amount of water is introduced into the machine; this water is recirculated repeatedly and sprayed against the soiled dishes at a high velocity of impact *with the energy supplied by a motor-driven pump or impeller*. Typical rates of water flow in the spray are 40 to 80 gallons per minute. In the *Chico* (which is dependent upon the house water system for all its power), each drop of water emerges from the spray orifice only once, and the spurts of water are much less well distributed, with much less energy, than in motor-powered dishwashers. The spray rate in the *Chico* is only about 3 gallons per minute, at the pressures likely to be found in many homes. The great difference in amount of water sprayed per minute is, we believe, critically important as an indication of the necessarily very limited effectiveness of any simplified, relatively inexpensive type of dishwashing appliance such as the *Chico*, as compared with conventional electric-power-operated dishwashers.

The efficiency of the *Chico's* dishwashing action was improved somewhat with increasing water pressure, but even at 50 pounds per square inch, the *Chico* did not wash as well as one of the poorer dishwashers of the usual kind operating with a spray head fed by a motor-driven pump, or with an impeller to produce a quick, fast, energetic water movement.

(*Continued on next page*)

A New York department store advertised that the Chico "does a professional job of washing and rinsing dirtiest, greasiest dishes." The condition of the dishes shown here in the Chico after washing and rinsing shows that such claims for the appliance were quite unwarranted.

The *Chico* can be loaded to hold up to 25 pieces of a normal complement of glasses, cups, saucers, dinner plates, etc., plus flatware, but no pans. A family of more than two persons would find this capacity too small; yet *Chico* advertisements claim that the appliance can handle service for five. Water consumption, determined by the water pressure and the length of time the unit is left running, will be high. In view of the cost of hot water consumed, the expense of operating the *Chico* might be as much as four times the cost of running a conventional dishwasher to handle the same number of dishes. In tests by Consumers' Research, the appliance used about 14 gallons of hot water when run for 6 minutes, as recommended by the manufacturer, with water pressure at 30 pounds; at 50 pounds pressure, the water used was 18 gallons. This compares with 7 to 12 gallons for conventional dishwashers, which readily hold 40 or more pieces rather than about 25. The washing efficiency of the *Chico* varied with the placement of the dishes and tableware and the number of dishes washed at a given time, as with a standard-size dishwasher.

C. Not Recommended

Chico Portomatic Dishwasher, Model DW-B (Chico General Products Corp., 525 Market St., San Francisco 5) $59.95. The device is 21 in. wide, 18 in. deep, 14 in. high. Performance in washing, with about average water pressure, was found to be poorer than that of the least effective electric-power-operated dishwashers so far tested by Consumers' Research.

Off the Editor's chest

(*The beginning of this article is on page 30*)

Since, along with high taxes, high fixed labor costs represent a substantial proportion of prices for commodities and services, it is obvious why the Consumer Price Index slowly creeps upward. The consumer pays in higher living costs for wage rises and improved, or at least increased, public services and welfare outlays. So long as public opinion sanctions wage rises that are not based on increased productivity, and tolerates continued expansion of governmental services, these two factors alone will keep prices high.

This rigidity in costs makes prices unresponsive to the consumer's traditional method of registering disapproval of prices, variety, quality, and performance, that displease him. When prices do not cover costs over an extended period of time, a manufacturer must inevitably go out of business, and increased unemployment necessarily follows.

If consumers were generally in revolt against high prices and high wages paid for services, there would no doubt be many bankruptcies. But they are not really discontented to that extent, and thrifty-minded folk are finding ways of making their money go further. The do-it-yourself handy man is making household repairs and doing his own painting and installing his own hi-fi system to save costly labor charges, instead of turning out scale models of trains or airplanes. Small foreign cars affording gasoline mileage around 30 miles to the gallon are growing in popularity. The substantial sales of sewing machines would indicate that more women are making their own and their families' clothing. Consumers can undoubtedly find ways to avoid or find substitutes for services and products that are priced too high because of labor costs, but reducing the tax burden is seemingly an almost hopeless matter. So long as the citizenry believes that *someone else* foots the greater part of the bill for community and public services, there will be no end to the mounting tax bills and consequent increases in the cost of living.

Electronic organs for churches

Consumers' Research ordinarily does not deal with subjects that are so far from the average man's immediate concerns as electronic organs for churches. Nevertheless, the topic is one on which we have received a great many requests for information. Furthermore, it falls in the category of items in which the making of a mistake can cause the congregation of a church to make a very substantial outlay and receive poor value for their expenditure.

Electronic organs are a field characterized by strong opinions sometimes very forcefully expressed, and we are aware that the judgments given cannot possibly satisfy all of those people who may consider that they have some degree of expertness in this field. Our readers may, however, be sure that this report represents the best knowledge available to us from persons who are qualified by background and experience to express a viewpoint well worth careful consideration by everyone interested in church organs.

An electronic organ for church use. This is the Baldwin Model 10.

THE TRADITIONAL musical instrument for use in churches is the organ. A good many people believe that an organ is a vitally important aid in creating a religious atmosphere in the services of a church. Certainly it supports and encourages congregational singing. When a new organ is to be bought, the committee which is entrusted with the task usually has as its first consideration the need to buy a satisfactory instrument within a rather limited appropriation. Space available may often be an important element in choice.

The traditional church pipe organ is made up of several ranks of pipes. Each rank for the manual keyboards contains either 61 or 73 pipes—one pipe for each of the 61 keys, which is the standard number for a pipe-organ keyboard, plus (usually) another octave of 12 pipes to allow octave coupling. Each rank differs in tone color and power from the other ranks. There are also ranks of pipes for the pedal keys. Each of these consists of 32 or 44 pipes for the 32 pedal keys found on a standard pedalboard.

Depending on the size of the instrument, there may be anything from five to several hundred ranks of pipes. Each rank costs the church from $1200 to $1600 or more. For a typical organ with 20 manual stops and 4 pedal stops, there may be between 1348 and 1636 individual pipes, plus blowers, wind chests, swell-shutter mechanisms, a console with complex wiring and sometimes pneumatic combination-action mechanisms inside it and a large number of cables connecting console to pipes.

An electronic instrument which uses a few dozen vacuum tubes or their equivalent and other more or less complex electronic circuitry, usually all contained within the console with the only external units being power amplifiers and loud-speaker systems, takes much less space, and costs far less than any reasonably adequate pipe organ.

A well-designed electronic organ can substitute very adequately for a church pipe organ, especially when the organ will be used for the service principally and not to a great extent for organ recitals of secular music. Size of the auditorium is not a factor except in determining cost; it is only necessary to add amplifiers and loud-speakers (or "tone cabinets") as may be required, to fill the largest space; quality of sound will be at least as good in such cases as with a single tone cabinet in a small auditorium.

The question of obtaining an electronic organ which will come as close in sound quality as possible to a pipe organ and will have the desired musical facilities and resources must be answered by the purchasers' listening to the various makes and models and selecting the one they prefer.

An electronic organ for church use usually has two manuals or keyboards of 61 notes each. The pedalboard is concave and radiating, conforming to the standard specifications of the American Guild of Organists.* An electronic organ of this

* The specifications are available at a nominal charge from the American Guild of Organists, 630 Fifth Ave., New York 20.

size has an array of stops which includes the tones of the fundamental primary colors of Diapason, Flute, String, and one or more varieties of reed stops. The instruments with full 61-note manuals and 25 or 32 pedals are far more suitable for churches, than the so-called spinets, in that they have sufficient keys and almost always sufficient pedals to play organ music as it is written, without requiring special arrangements or changes of bass parts. Full-size organs are also easier for a novice to play than a spinet with its 44 notes and a 13-note pedalboard, despite the greater number of keys, pedals, and stops which may at first glance appear to indicate greater complication. The reason is that it is not necessary constantly to play in a way that compensates for the spinet's lack of needed keys and pedals.

In an earlier article in CONSUMER BULLETIN for February 1958 ("Electronic organs for the home"), the methods used to generate tones in electronic organs were discussed. Briefly, these are the spinning tone wheel employing magnetic "pick-up" (*Hammond*), the vibrating free reed with capacitive pickup (some models of *Wurlitzer*), the vacuum-tube oscillator (*Baldwin* and several other makes), the neon lamp (*Kinsman*), the transistor (*Gulbransen*), and a device using a phototube. Of these, the vacuum-tube oscillator and neon lamp are deemed by most musicians and electronic engineers to be capable of providing maximum variety and authenticity of tone colors.

All electronic organs have the following qualities in common with a pipe organ:

1. The tone may be sustained indefinitely.

2. The loudness or volume of a tone may be increased or decreased while it is being sustained, at the will of the performer.

3. A range of volume from soft to loud is available.

Any committee selecting an organ for a church will have to consider that one of the primary purposes of the organ is to support and encourage congregational singing. On this account, the committee should listen to the organ at soft volume and then again when it is played loudly as it must be played when used in churches for singing.

Mere loudness, however, which can be achieved with any organ, is not the ultimate criterion of suitability for accompanying congregational singing. It is equally important that there be at least one strong chorus reed and that the strings should be "stringy." These will give a pointed and penetrating quality which is essential to allow the melody to be heard by the congregation over their own singing so that they have something to follow. Good penetrating solo reeds are also advantageous. On organs such as the *Hammond*, which do not have enough high-frequency overtone content to create good string and reed tones, high volume for congregational singing is more confusing than useful, since the music heard above the singing is likely to be of a tonal character that would give no obvious lead.

In buying a tone cabinet, which is a chamber containing one or more loud-speakers, have in mind that several will likely provide better results than one since, when there are several, each can be used at moderate power. This adds to the cost, but it is worth while, for overloading a single speaker will produce poor and unpleasing sound quality. In other words, only a limited volume can be delivered by a single loud-speaker without becoming unpleasant.

In many church installations, the standard tone cabinets are not used. Instead, individual speakers and sets of speakers are placed on large "baffle boards" in the church proper or in reverberation chambers. Dealers should have the knowledge to do this, but if not, members of the congregation with experience in sound-system principles and installation should be consulted. Often such special installations are not more expensive than tone cabinets and yield far better results.

In any event, speaker placement is always a matter for experiment, and several locations should be tried before deciding upon a final one. Furthermore, a given speaker placement, as well as a final decision on the number of amplifiers and speakers, should never be accepted until it has been tried with the church or auditorium occupied. The bodies and clothing of the congregation absorb a large amount of sound, so that an installation which gave ample sound power with the room empty may be found totally inadequate when the room is full.

In buying an electronic organ for church use (as well as for the home), remember that the organ must be reliable under normal conditions, durable, and easy to service. Guarantees are useful, though they are valueless except as they are supported by the integrity of the manufacturer or the dealer. Keep in mind, however, that no company is able to say exactly how often service will be required nor how long a repair of unspecified type will take. Fortunately, most electronic organs are highly reliable and diagnosis of malfunctions is relatively easy; a repair can often be made within a few minutes. Two factors are of principal importance: (a) immediate availability of a serviceman, and (b) the reliability history of the particular brand and model as obtained by inquiry of other owners.

How often will the organ have to be tuned? An organ in which every note must be tuned individually, such as the *Allen* or the *Conn*, is more

difficult to tune and will require tuning more often than an organ which employs "frequency dividers," such as the *Baldwin* or *Minshall;* for instruments in the latter category, the entire instrument requires only 12 tuning adjustments. The *Hammond* is relatively trouble-free, and requires no tuning at all.

One last word to the church organ committee. In selecting an instrument, consider authenticity of sound and variety of sounds available as of equal importance. If the organist of your church is a professional or a trained amateur, give weight to his opinion. Concentrate on these essentials:

1. Authenticity of tone.
2. Extent of tonal variety between smooth, bland flute sounds and sharp, biting reeds and strings. Remember that the number of stop tablets is by no means a sure indication of the useful variety of tone colors available.
3. Ready availability of service.
4. General satisfaction with playing facilities and conformity to pipe organ physical standards (best judged by an experienced pipe organist).

Keep in mind that selling electronic organs is a highly competitive business, and sales talks and sales methods are sometimes far from being in accord with the sacred nature of the intended use of the instrument. "Special" discounts, liberal "free" trials, extravagant claims, and wholly unjustified criticism of competing brands are often the order of the day. Screen out this misleading material from your consideration and concentrate on the essentials discussed in this article.

There are two books that give helpful technical information on electronic organs. One is Electronic Musical Instruments, by Richard H. Dorf (published by Radio Magazines, Inc., Mineola, N.Y., second edition, 1958). Included in this book is technical information about several of the electronic organs as well as a discussion of the limitations inherent in the different designs of the tone generation systems.

Another book of interest to church organ committees and others is The Contemporary American Organ, by William H. Barnes (J. Fischer & Bro., N.Y.C., 1956). This volume is concerned with pipe organs primarily, but has a chapter on electronic organs.

Organs are listed in alphabetical order within the two groups that follow, not in order of preference. All manuals had 61 keys, except as noted.

A. Recommended

Allen (Allen Organ Co., Inc., Macungie, Pa.) Has vacuum-tube oscillators for tone production. *Model C1*, $3695. Two manuals, 32-note pedalboard, one expression pedal, 21 stops, and "Gyrophonic Projector." *Model C3*, a larger stock model than the *C1* with Crescendo pedal and "Gyrophonic Projector," $5100. *Model S-12A, Rondo.* Two 5-octave manuals, 25-note pedalboard (less desirable), $1845. Prices given are f.o.b. factory. The Allen Company also produces custom-built electronic organs, which are often of considerable size, costing up to $50,000 or more.

Baldwin (Baldwin Piano Co., Organ Div., Cincinnati 2) Has vacuum-tube oscillators for tone production. *Model 10A*, $6114. Two manuals, 32-note pedalboard, two expression pedals, Crescendo pedal, 32 stops, 10 couplers. *Model 5A*, $2964. Two manuals, 32-note pedalboard, two expression pedals, 26 stops, 6 couplers. *Model 45*, $2215. Two manuals, 25-note pedalboard (less desirable), one expression pedal, 19 stops, 4 couplers. *Models 10A* and *5A* require one or more tone cabinets at $325 and up each.

Conn (Conn Organ Corp., Elkhart, Ind.) Has vacuum-tube oscillators for tone production. *Classic Model*, $3650. Two manuals, 32-note pedalboard, two expression pedals, 19 stops, 14 couplers. *Artist Model*, $2500. Two manuals, 25-note pedalboard (less desirable), one expression pedal, 20 stops, 9 couplers. *Rhapsody*, $1995. Two 49-note manuals, 25-note pedalboard (less desirable), 16 stops, 8 couplers. Tone cabinets, $223 to $605 extra on *Classic* and *Artist* models.

Wurlitzer (The Wurlitzer Co., DeKalb, Ill.) Has vibrating reeds for tone production. *Model 4800*, $3450 to $3850. Two manuals, 32-note pedalboard, one expression pedal, Crescendo pedal, 30 stops, one coupler, four combination tablets. *Model 4602*, $2620 to $2800. Two manuals, 32-note pedalboard, one expression pedal, 25 stops, two ensemble tablets. *Model 4600*, $2420 to $2600. Two manuals, 25-note pedalboard (less desirable), one expression pedal, 22 stops, two ensemble tablets. Tone cabinets, $273 to $605. Tone system improved over former models, but tonal color is limited because of basic flute quality.

* * *

Hammond (Hammond Instrument Co., 4200 W. Diversey Ave., Chicago 39) Employs spinning tone wheels for generating tone. *Concert Model*, $3047. Two manuals, 32-note pedalboard, one expression pedal. *Church Model*, $2255. Two manuals, 25-note pedalboard, one expression pedal. Tone cabinets at extra cost of $452 to $610. *Home Model*, $2365. Two manuals, 25-note pedalboard (less desirable), one expression pedal. The *Hammond* does not have stops as such but draw bars of coupler type with which one sets up a combination of harmonics or overtones so as to achieve the tone desired. These organs have limitations musically since even the largest models produce neither fundamentals nor harmonics above about 6000 cycles and cannot therefore produce sounds which are actually reed-like or string-like.

Minshall (Minshall Organ, Inc., Brattleboro, Vt.) Has vacuum-tube oscillators for tone production. *Olympia*, $2625. Two manuals, 25-note pedalboard (less desirable). *Bennington*, $2045. Same specifications as *Olympia*, except that it lacks one of the features of the latter. Tone cabinets at an extra cost of $245 to $385.

How to avoid being gypped when buying a car

MUCH OF THE BLAME for the poor sales of the 1958 automobiles, and some other products, especially major household appliances, can be attributed to the price situation in which manufacturers and dealers have contrived to make it practically impossible for consumers to buy with discrimination and with full knowledge of the price increases from year to year. The automobile trade's use of mythical list prices from which large "discounts" are given, to make the buyer feel he is getting a bargain, and many other tricks to get the dollars even of wary and careful consumers—tricks which have often been exposed by Consumers' Research—have led to a justifiable reluctance on the part of the consumer to purchase, for fear of being "taken."

Nobody likes to be trapped into paying an excessive price for a product, but the effort required for letter writing and shopping around necessary to insure against being outsmarted and cheated by manufacturers and dealers is so great in the past year or two that many have decided to sit back and make their present car suffice. The problem of buying against such strong resistance by dealers and manufacturers to telling the necessary truth about their products has finally become so great that some millions of potential customers have said, the heck with it, and have decided to keep their money and make do with the car they have.

For the consumer who does want to buy a new car, valuable help in determining a fair price for a new car is now available from two sources:

The Car Fax Company, 550 Fifth Ave., New York 36, will supply, for $1 plus 25 cents postage, "a car facts guide" which gives the official factory-suggested prices, supplies a list of detailed equipment and accessories, lists freight costs, costs of standard and of optional equipment of all the 1958 models as well as the leading makes of foreign cars, gives the suggested prices of optional equipment and accessories, tells what equipment is standard, names the freight charge and gives advice on buying and financing.

Auto Costs Publications, Box 224, New York 1, will supply for $1 the wholesale prices charged to the dealer for all body types of any three 1958 American or foreign cars and their accessories and optional equipment. If you send in the year, make, model, and equipment of the car or truck you intend to trade in, Auto Costs will supply, without additional charge, the average "wholesale value" of your present car in your area.

CR receives many inquiries from subscribers who do not have the remotest idea whether the price they are asked to pay for a used car or amount they have to pay plus their old car for a new car is a fair one, and have no idea how to go about solving these very important problems. The inquiries we have answered indicate that dealers are trying—not unnaturally—to get all the traffic will bear. Since this is so, the consumer who is averse to looking around, getting competitive prices, bargaining, haggling, or horse trading is likely to pay much more than he needs to for a car. In one case recently, a subscriber was asked *double* the amount set forth in the National Automobile Dealers Association book (used by most dealers to determine trade-in values) for a used 1953 model. CR believes that anyone in the market for a new or used car will find it well worth while to spend $1 or $2 for one or both services described, if only to have the assurance that he paid a fair price and was not "taken" by an oversharp salesman.

For many consumers, the information supplied by Car Fax or Auto Costs Publications may be just the key needed to defeat the ruthless and aggressive salesmanship exemplified by a large proportion of the people in the retail automobile business and the used-car trade, especially in metropolitan areas.

Advice on removing ink stains

IT IS A GOOD RULE not to use milk to remove ink stains, according to the National Institute of Drycleaning. The Institute notes that the practice of soaking an ink stain in milk to remove it probably got started because lactic acid (present in sour milk) is quite effective in removing ink of the tannate type. Inks nowadays are very often not of this kind, and unless you know the type of ink you are trying to remove, you may set the stain and then there is no method or technique whatever that you can use to remove the stain.

The best rule, according to a fountain-pen manufacturer, is to soak the ink spot in plenty of plain water immediately—even if the fabric is not washable. Follow up with a detergent-and-water treatment.

The homemaker should have in mind the fact that materials commonly used in a household are changing from year to year and old rules and ways are not always good for today's conditions.

Domestic oil burners

TODAY, three oil burners of every four sold are factory-coordinated furnace-burner or boiler-burner units. The burner built into a single unit with a furnace (warm air) or boiler has the advantage of insuring proper coordination of such design details as firing rate, furnace volume, control locations, etc. However, with the known exception of General Electric's integrated design, these factory-coordinated models are comprised of various combinations of conversion burners and separately made heating units which are merely assembled by the manufacturers either of furnace or boiler or of the oil-burning element of the combination. The ready-assembled equipment is encased in a single insulating jacket of decorative design and sold under the brand name of one of the manufacturers involved.

The purchaser should make it a point to know what is the make of the burner in the complete unit so that he may check on its manufacturer and features of its design. It would be wise not to buy from a salesman who refuses to give the name of the burner used, for when the name is not given, it may mean the company shops for burners solely on a price basis. In addition, there is a strong possibility that the burner used may be an "orphan" or a substandard unit of a questionable kind. A boiler manufacturer who has an established connection with a manufacturer of good burners will not be ashamed of this nor will he hide the name of the maker of the burner.

Types of burners available

There are three predominant types of burners that are worthy of consideration. Of these, the high-pressure atomizing type is by far the most popular, accounting for 84 percent or about five out of six of all oil burners installed. Low-pressure atomizing burners are next, with 10 percent of all installations. Vertical rotary burners are third, with 5 percent. (Vaporizing burners which are in very limited use because of the hazards and inconveniences in their operations are rightfully last, with only about 1 percent of sales.)

High-pressure atomizing type

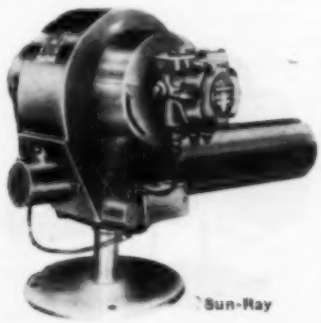
The high-pressure atomizing burner has a tremendous appeal to manufacturers in that it can be almost completely assembled from dependable component standard parts; these burners thus lend themselves to mass-production techniques and to low cost of assembly.

An oil burner manufacturer, or rather assembler, has wide latitude in his choice of both source of supply and quality of parts used. He may choose one of six or eight makes of motors, one of two makes of oil pumps, one of several makes of transformers, nozzles, and blower wheels. Then he makes a housing that will enclose the fan and deliver air to a blast tube. There are several sources for firing heads. It will be seen that the small enterpriser can set himself up in business rather easily as the manufacturer of a high-pressure gun-type oil burner.

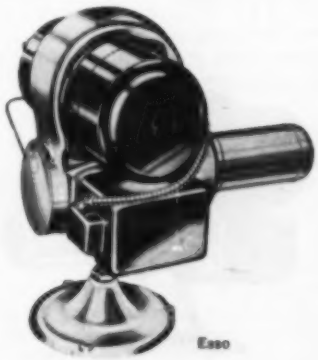
Since the differences between one high-pressure burner and another are apt to be small, the reputation and integrity of everyone handling the burner, from the factory down through the distributor and salesman to the actual installer and serviceman, are vital considerations. *A thorough inquiry into the local merchandising and service setup is thus by far the most important phase in deciding upon a brand of oil burner.*

There is no inherent objection to the widespread use of component parts made by several manufacturers. The objection is to the fact that these parts often may be only brought together in one assembly, and not engineered together as they should be.

Carlin



Sun-Ray



Esso

The following is a list of some of the better-known manufacturers of oil burner parts. It may be useful as a guide to local appraisal of burners not specifically included in this study.

Manufacturers of component parts for oil burners

A. Recommended

Motors
Century
Delco
Emerson
General Electric
Ohio
Packard
Westinghouse

Combustion heads
Shell
Monarch

Nozzles
Delavan
Hago
Monarch

Pumps
Sunstrand
Webster

Transformers
General Electric
Jefferson
Super
Webster
Westinghouse

Controls
General Controls
General Electric
Perfex
Penn
Minneapolis-Honeywell
White-Rodgers

Price and price trends

According to a leading trade magazine, Fuel and Oil Heat, the average installed price of the three leading types of burners should be about as follows:

High-pressure atomizing.....$350

Low-pressure atomizing.....$410

Vertical rotary, wall flame.....$480

Factory-assembled boiler-burner units now average $755 retail, including installation.

Combustion chamber

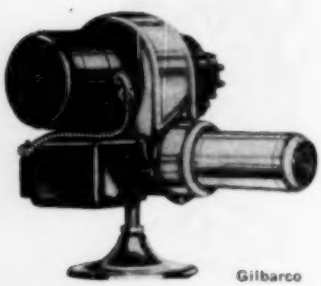
Next only in importance to the selection of a good oil burner assembly is the matter of providing a proper combustion chamber. Originally it was believed that square and rectangular combustion chambers were the ones best adapted to small conversion burners, but experience has shown that round chambers are equally good and in many cases actually to be preferred. Modern specifications accept either, but definitely frown on the once-popular pear-shaped chamber. Soft insulating brick should be used for the combustion chamber in domestic burner furnaces, not stainless steel or other metals, despite the cheapness and adaptability of some of the metal chambers.

Burner listings

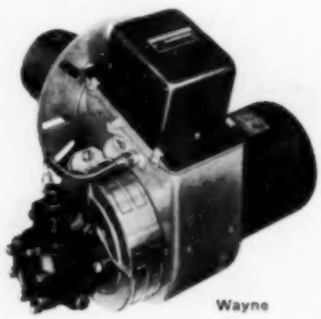
With approximately 465 companies now manufacturing oil burners, of which two thirds offer high-pressure atomizing models, a full review by brand names is obviously impracticable. Consumers' Research has therefore chosen to report on several representative burners of each type that are widely sold on a national basis. The omission of a brand of burner from the listings is not to be construed as reflecting on that brand or its merit in any way.

Those brands which were judged to incorporate noteworthy features of design and construction have been rated *A. Recommended.* A *B-Intermediate* rating does not imply inferior construction or performance.

The listings apply to burners for domestic installations. Some readers may be interested to know, however, that many of the listed manufacturers make larger models and may likewise offer coordinated, jacketed, boiler- and furnace-burner units. The capacity ratings are those published by the manufacturers. However, the readers should bear in mind that operation of any of the high-pressure burners below 1 g.p.h. may not prove trustworthy or safe. (Low-pressure and vertical rotary burners are not subject to this limitation.)


Gilbarco

Heil


Wayne

The chief factors to be considered when selecting the kind of fuel for a heating system are: continuity of supply, dependability of operation, convenience, cleanliness, safety, and cost. To facilitate a choice among oil, gas, coal, and electricity the following tabulation will be helpful. The figures refer to the order of preference under the various heads.

Fuel	Continuity of supply	Dependability of operation	Convenience	Cleanliness	Safety
Coal	1	1	4	4	2
Electricity	2	2	1	1	1
Gas	3	3	2	2	4
Oil	2	3	3	3	3

The cost of heating your home will vary depending upon the type of fuel used and its comparative cost in your locality. Allowing for certain differences in efficiency of utilization of fuel, 1 ton of coal, *180 gallons of* oil, *48,000 cubic feet of* manufactured gas, *24,500 cubic feet of* natural gas, *and 6000 kilowatt-hours of* electricity *offer approximate equivalent amounts of house heating. To determine your most economical choice, find the cost per unit (gallon, cubic foot, etc.) of each fuel in which your are interested and multiply that cost by the number of equivalent gallons, cubic feet, or kilowatt-hours given for that fuel in the preceding sentence (180, 48,000, etc.).*

The *Shell* head, mentioned in several listings, is designed to insure controlled, uniform mixing of the air-oil mixture at all points in the flame until combustion is complete. It gives high efficiency of burning combined with relatively quiet burner operation and a clean flame.

High-pressure atomizing oil burners

A. Recommended

Carlin (The Carlin Co., 912 Silas Deane Highway, Wethersfield 9, Conn.) *Model 400 S-2*, 0.75[1] to 1.75 g.p.h.; *400 S-3*, 1.75 to 3.00 g.p.h. A combination delayed-opening and instantaneous-cutoff solenoid oil valve is standard (a desirable feature, to minimize oil dripping with resulting soot and smoke). *Shell* heads standard (desirable). Flange or pedestal mountings. Intermittent ignition. The capacity ranges are closely coordinated with nozzle type and capacity as well as with air flow.

Chrysler Airtemp (Airtemp Div., Chrysler Corp., P.O. Box 1037, Dayton 1, Ohio) See listing of *Wayne*.

Esso (Esso Standard Oil Co., 15 W. 51 St., New York 19) See listing of *Gilbarco*. Esso has available a *Watchdog* control system that can be installed on present equipment regardless of brand. This is a device which uses an auxiliary outdoor thermostat to afford better control of indoor temperatures. The *Watchdog* system is priced at about $17 to $19 higher than standard controls.

Gilbarco (Gilbert & Barker Mfg. Co., West Springfield, Mass.) Also marketed under the *Esso* brand, along the Eastern Seaboard. *Model CS*, available with interchangeable air cones for choice of firing at 1.2 to 1.65 g.p.h., or 1.75 to 2.5 g.p.h. The use of a narrow firing range, which should promote high combustion efficiencies, is preferable to the method in which the full firing range is covered by merely changing the nozzles. Air flow is provided before the flame is ignited and after the flame has ceased, to promote clean performance, avoid smoky starts and stops, and help to keep down accumulations of soot (desirable).

Heil (Heil-Quaker Corp., 2911 S. 32 St., Milwaukee 1) *Model CB-1*, 0.65[1] to 1.65 g.p.h. *Model CB-2*, 0.75[1] to 2.50 g.p.h. is very similar to *CB-1* except that, because of the wider firing range, a choice of two nose deflectors is provided.

Sun-Ray (Sun-Ray Burner Mfg. Corp., 139-24 Queens Blvd., Jamaica 35, N.Y.) *Series S*, 0.70[1] to 3.0 g.p.h. *Shell* heads. Delayed-action oil valves by which air flow is provided before the flame is ignited to promote clean performance, avoid smoky starts and stops, and help to

[1] CR does not recommend equipping high-pressure burners with nozzles for flows of less than 1.0 gallon per hour.

keep down accumulations of soot (desirable). In addition to standard a-c models, special types are available for d-c and unusual a-c voltages and frequencies.

Sunstrand (Sunstrand Engineering Co., 1325 Seventh St., Rockford, Ill.) *Model SS, Sunstrand Special*, 0.5[1] to 2.25 g.p.h. Five combinations of nose-pieces (chokes), disks, and fans provide for burning rates in increments of not over ¼ g.p.h., which is favorable to obtaining good efficiency throughout the capacity range. Delayed-action oil valve by which air flow is provided before the flame is ignited, to promote clean performance, avoid smoky starts and stops, and help to keep down accumulations of soot (desirable). Also *Models XA-2*, 0.75[1] to 1.75 g.p.h., and *XB-4*, 1.35 to 3.0 g.p.h. Two-stage pumps, delayed-action solenoids, and *Shell* heads, optional at extra costs.

Wayne (Wayne Home Equipment Co., 811 Glasgow Ave., Fort Wayne, Ind.) Sold mainly to heating equipment manufacturers for resale under their private brand names. Included are such companies as Chrysler and York. *Model E*, 0.6[1] to 3.0 g.p.h. Equipped with multiple steel baffle disk located in the gun which can be broken away in part as required upon installation to supply the proper air-supply pattern for the firing range desired, 1.0 to 1.5 g.p.h., 1.5 to 2.25 g.p.h., or 2.25 to 3.0 g.p.h. If properly installed, this feature should provide efficient burning of the oil.

B. Intermediate

A B C (Automatic Burner Corp., 1823 Carroll Ave., Chicago) Like the *Wayne*, made available to furnace and boiler manufacturers for resale under their own brand names in assembled furnace-burner and boiler-burner units. *Model 55-J*, capacity 0.60[1] to 3.00 g.p.h. A very inexpensively constructed model. *Model 52-A* capacity 1.0 to 5.5 g.p.h. Two firing nozzles used for 2.50 to 5.5 g.p.h. On both models, changes in rating are accomplished in steps of not over 1.0 g.p.h. by the use of various air delivery parts and nozzles (a desirable feature). Option of constant or intermittent ignition (both models).

Beckett (R. W. Beckett Corp., Elyria, Ohio) Like the *Wayne*, made available to furnace and boiler manufacturers for resale under their own brand names in assembled furnace-burner and boiler-burner units. *Series OC*, 0.75[1] to 2.0 g.p.h. *Series ON*, 1.65 to 3.50 g.p.h. Fan, motor, and pump shaft are located parallel to axis of burner instead of at a right angle as is customary.

Delco (Delco Appliance Div., General Motors Corp., Rochester 1, N.Y.) *Model H-200*, 0.75[1] to 1.75 g.p.h. *Model H-300*, 1.5 to 2.75 g.p.h. *Series F: F 165-1*, 0.75[1] to 1.65 g.p.h., and *F 175-1*, 1.50 to 2.75 g.p.h. *Delco* furnace- and boiler-burner coordinated units employ stainless-steel combustion chambers, which are deemed much less desirable than lightweight fire brick.

Esso, Model BS. See listing of *Gilbarco Model BS*.

Gilbarco, Model BS. Similar to *Model CS* in all respects except that the *BS* is equipped with standard clutch. Consumers are advised to select the *Model CS* burner which is equipped with the "economy clutch" and believed to be worth the $26 difference in price charged.

Iron Fireman (Iron Fireman Mfg. Co., 3170 W. 106 St., Cleveland 11, and Portland, Oreg.) *Model M-2*, 0.6[1] to 4.5 g.p.h. *Model V, Radiant Vortex*, capacity to 2.5 g.p.h. Burner equipped with a vertical nozzle mounted in an integral pot-type combustion chamber. The manufacturer claims marked advantages for the built-in combustion chamber due to increased radiant heat and to increased heat transfer to the furnace ceiling, but it is the opinion of Consumers' Research engineers that the lightweight brick chambers normally installed with conventional gun-type burners will provide virtually the same end result.

Nu-Way (Nu-Way Corp., Rock Island, Ill.) *Model IXL 175*, 0.65[1] to 1.75 g.p.h.; *Model IXL 300*, 1.75 to 3.00 g.p.h. A conventional assembled burner primarily designed for sale to boiler and furnace manufacturers for resale in factory-assembled furnace- or boiler-burner units under the brand names of the manufacturers. Cast-aluminum housings. Normally furnished with continuous ignition; intermittent ignition is extra.

Radiant (Radiant Utilities Corp., 8817 18 Ave., Brooklyn 14, N.Y.) *Model S & A*, 0.75[1] to 2 g.p.h.; *Model 2-1/2M*, 1.35 to 2.5 g.p.h. Relatively wide capacity range of each size considered less desirable than if the burners were fitted to match actual firing conditions more closely. Conventionally designed throughout. *Models 2* and *3* can be *Shell*-head equipped (desirable) at extra cost. *Model 2*, 0.75[1] to 1.75 g.p.h., and *Model 3*, 1.75 to 3.0 g.p.h., are rated *B+* with the *Shell* head. In *Model 3*, changes other than the nozzle would have been more desirable to provide for the 1¼-gal. spread in capacity range.

Sun-Ray, Series VS. *VS*, 0.70[1] to 2.0 g.p.h.; *VS-1*, 2 to 3 g.p.h. Similar to *Series S*, including *Shell* head and delayed-action oil valve, but gun is mounted vertically. No separate combustion chamber is used. As CR has not tested these models to determine the effect of vertical operation without a combustion chamber, they are tentatively listed *B. Intermediate*. Sun-Ray also offers a line of six standard burners rated between 0.50[1] and 3.50 g.p.h., assembled with well-selected component parts.

Timkin (Scaife Co., Oakmont, Pittsburgh District, Pa.) In addition to the more familiar vertical wall-flame burner, Timken also make a conventional high-pressure gun-type burner for use in rectangular boilers or furnaces. Equipped with a flame control.

Toridheet (Toridheet Div., Cleveland Steel Products Co., 16025 Brookpark Rd., Cleveland 11) *Model JC*, 0.50[1] to 2.75 g.p.h.

C. Not Recommended

Carlin. *Model 400 S-1*, 0.50 to 0.75 g.p.h. Low capacity likely to cause firing troubles.

Radiant Shell Head. *Model I*, 0.50 to 0.75 g.p.h. with *Shell* head. Low capacity likely to cause firing troubles.

[1] CR does not recommend equipping high-pressure burners with nozzles for flows of less than 1.0 gallon per hour.

Guarding the home against fires and explosions due to gas

(The beginning of this article is on page 2)

rather effective method is to maintain a 2-foot-wide minimum of soft, uncompacted soil as a foundation border along the sides of the house. This border can be made attractive by use of appropriate foundation plantings; it will provide some outlet for accumulated gas pressure. One or two inches of peat moss on top will benefit the plantings, while keeping the ground relatively soft and moist in all weather except severe freezing. Any sudden or otherwise unexplainable wilting or dying of the plants may well be a warning that they are being poisoned by escaping gas, and the matter should be investigated immediately. (See Figure 2, page 28.)

In addition to providing an outside border, the householder should seal thoroughly any obvious holes, cracks, or other openings in a cellar wall if these are exposed to possible entrance of leaking gas. Crawl spaces under basementless buildings should have effective ventilation, and openings should be kept clear of obstructions at all times.

Reporting gas leaks

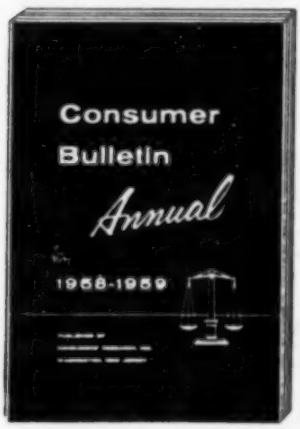
Do not fail to report to your local utility any indication of a gas leak, such as smell, unexplained death of trees and shrubs, or abnormal operation of gas appliances—and then stay with the problem until the danger is corrected. A day's inaction or delay may cost lives. It should be noted here that, while both natural and liquefied petroleum gases are now almost universally odorized artificially, the odorants used have a marked tendency to lose their effectiveness as they travel through soil; thus, even the faintest residual odor should be considered as warranting investigation and report.

When you report such leaks, supplement your phone calls with a written complaint, preferably sent by certified mail, particularly if there seem to be indications of procrastination, or casualness in handling the complaint. This will establish the utility's responsibility, and may prove an effective aid in court if an accident follows because of the gas company's failure to act with reasonable and warranted promptness.

While only a relatively small percentage of incidents involving damage or injury is directly caused by delays, failure to act promptly has contributed to some very serious cases of gas fires and explosions.

Leaks due to construction

Consumers would be well advised to be alert particularly for gas leaks during and after any work or excavations in the street. Damage to gas mains by the heavy equipment of sewer, paving, and

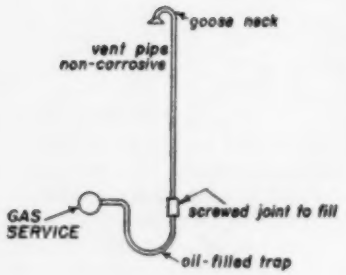


Hurry!

Hurry!

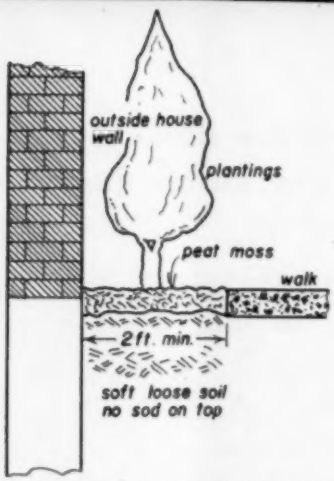
Hurry!

Order your copy of the forthcoming 1958-59 Annual Bulletin today! It's due off the press the last of this month, over 200 pages of practical, money-saving information, summarizing a wide range of previous findings of Consumers' Research and including also new material that has not appeared in any other Consumer Bulletin. Conveniently indexed for ready reference, the Annual Bulletin is often called the consumer's "handbook of buying." If you sit right down and fill out the convenient order form which you will find on the next page, mailing it to us with your remittance promptly, we'll make a special effort to include your name in the first mailing. It would be a good idea to get your order in without delay, before you leave for your vacation!



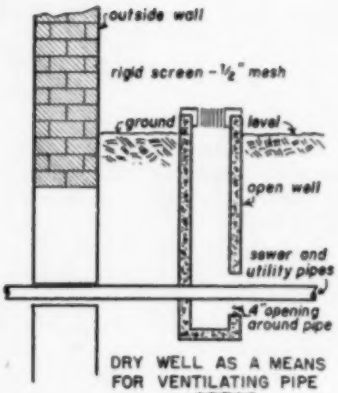
SIMPLE PRESSURE SEAL

Figure 1



USE OF PLANTED BORDER FOR GAS VENTILATION

Figure 2



DRY WELL AS A MEANS FOR VENTILATING PIPE AREAS

Figure 3

other contractors, whose men are often not aware of the extreme dangers they may unwittingly cause, is a particularly frequent cause of serious gas fires and explosions.

Bottled gas

Homes which use liquefied petroleum gas, either as supplied from individual containers (bottled) or municipally distributed gas, are particularly susceptible to fires or explosions due to gas leakage originating in the cellar. This type of gas, unlike either manufactured or natural gas, is much heavier than air and therefore, when leaks occur, the gas tends to accumulate in low spots where it may be detonated by even the slightest spark, the turning on of an oil burner, a water pump, an electric switch, or radio set, or even a spark of static electricity.

Excess pressure

Excess pressure may occur in the gas lines connected to your dwelling, due to a malfunctioning of the equipment in the main distribution system. This type of breakdown has caused many disasters (see article in the October 1957 CONSUMER BULLETIN). As a result of exhaustive investigations in the Brighton, N. Y., area, where three persons were killed and 44 houses wrecked, reports of both the Bureau of Mines and the National Board of Fire Underwriters made the following recommendations for safeguarding consumers against the hazards of abnormal gas pressures.

1. *Individual service pressure regulators should be provided in all existing and future installations.*

Consumer Bulletin

WASHINGTON, NEW JERSEY

Please enter my order as checked. I am enclosing my check (or money order) for $_____.

Begin subscription with_____issue.

NAME_____

STREET_____

CITY & ZONE_____STATE_____

BUSINESS OR PROFESSION_____

CR-8-58

Please check your preference:

☐ I enclose $2 (Canada & foreign, $2.25) for a copy of the forthcoming September 1958 Consumer Bulletin Annual. Since I am a subscriber to Consumer Bulletin (12 issues), I am entitled to the special rate.

☐ I enclose $5 (Canada & foreign, $5.20) for one year's subscription to Consumer Bulletin monthly (12 issues).

☐ New ☐ Renewal

☐ I enclose $7 (Canada & foreign, $7.20) for one year's subscription to Consumer Bulletin monthly (12 issues) AND the forthcoming September 1958 Consumer Bulletin Annual.

☐ New ☐ Renewal

Such regulators should be of an approved type and equipped with an excess-pressure release vent which will discharge gas safely to the atmosphere outside the exterior walls of the consumers' premises. Even where master pressure regulators and vents are in use, individual pressure regulators provide a secondary defense against excessive pressures on consumers' premises.

2. *Individual curb shut-off valves should be provided on all new installations of gas services.* (Those who value their homes and love their families will think that perhaps all existing services should be included in the scope of the rule.) The New York Public Service Commission points out that all service cocks should be of the new "tamper-proof" type.

The installation of shut-off cocks at the curb on every existing home gas installation would entail considerable expense to utilities whose piping systems are not now universally equipped in this way. Many utilities therefore oppose residential shut-off cocks, claiming that they are neither suitable nor feasible because the access plate may become covered with dirt and make it difficult or impossible for emergency crews to locate the valves immediately and shut off the gas. From the standpoint of safety, it is impossible to see why a shut-off valve that cannot be located presents more of a hazard than no valve at all. Moreover, it should be the utilities' responsibility to mark and record the location of all such valves, and place the records in the hands of their servicemen and emergency crews (and of the householder). Naturally, it should be the consumer's responsibility to keep the access plate free from sod or other covering material.

The National Board of Fire Underwriters also recommended that an easily operable shut-off cock be provided at all meters, the cock to have a permanently affixed indication of the method of operation (showing direction of rotation) and a warning against the hazards involved when gas is turned on by anyone except an authorized serviceman.

Unfortunately, putting recommendations (1) and (2) and the change shown in Figure 1 into effect requires cutting into the gas service piping for the installation of equipment. For that reason, the changes required should not, under any circumstances, be carried out on a do-it-yourself basis. If your public utility will not provide these safeguards without charge, the cost of providing them, whether they are installed by the utility or a plumber (gas fitter), is not prohibitive. As the requirements numbered (1) and (2) above are *essential* safety measures recommended by authoritative organizations, state and local codes should include them as mandatory requirements. (Such codes often contain adequate provisions covering public buildings and places of assembly, but it usually is up to the consumer to see that these codes are extended to provide equivalent means to safety for residences.)

TYPICAL POTENTIAL ENTRANCES FOR ESCAPING GAS

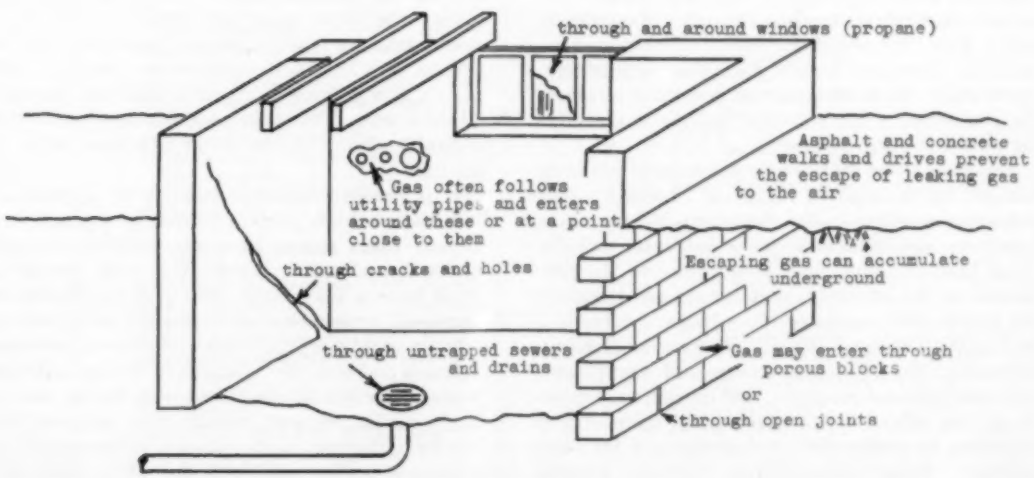

through and around windows (propane)
Asphalt and concrete walks and drives prevent the escape of leaking gas to the air
Gas often follows utility pipes and enters around these or at a point close to them
through cracks and holes
Escaping gas can accumulate underground
through untrapped sewers and drains
Gas may enter through porous blocks
or
through open joints

Figure 4

● OFF THE EDITOR'S CHEST

The high cost of living

THE HIGH COST OF LIVING is a much-discussed topic these days, not only at home but in sales conventions and in the financial pages of newspapers and magazines. The official Consumer Price Index keeps rising slowly but persistently, yet there is considerable unemployment, particularly in steel and auto manufacturing. It is no secret that consumers are not buying household appliances and clothing in sufficient quantities to keep factories working to something like capacity output, yet prices, which should respond to the law of supply and demand, have not noticeably decreased.

In spite of the recession, consumers apparently have money to spend—and, indeed, are spending it. Personal income for the country as a whole was reported by the U.S. Department of Commerce for the first quarter of 1958 as only slightly less than one percent below the all-time high set in the third quarter of 1957. Vacation activities, travel, summer resorts, new boats, swimming pools, fishing tackle, hi-fi, and good food are reported to be showing substantial volumes of business.

What puzzles the experts is why prices have risen in a period of recession. The Consumer Price Index in April 1958 was recorded as 123.5 (as compared with 1947-49 base of 100), up 4.4 from March 1957 when the index registered 118.9. For more than a million union members whose contracts have escalator clauses that provide for an automatic increase when the index of consumer prices goes up, the April index brought a two-cent and three-cent hourly wage rise. For others, particularly those on pensions and fixed incomes, the rise meant a further deterioration in the buying power of their dollars.

Statistics show that hourly wages have not been lowered by the current recession. Indeed, many industrial workers under the terms of long-range contracts get automatic wage increases, wholly apart and, in some cases, in addition to the provisions of the so-called escalator clauses based on the rise in the Consumer Price Index. According to The Wall Street Journal, workers in steel manufacturing, electrical machinery and equipment, food and kindred products, and on railroads benefit as the official index goes up, in spite of any recession in production of and demand for their output. Wage inflexibilities, entirely outside employers' control, make it impossible for these industries to price their products and services lower to stimulate demand. The paradoxical situation in such cases is that, while hourly wage *rates* remain high, take-home pay drops or is nonexistent in some cases because of the customers' refusal to buy at current prices.

Another cost factor that keeps prices high is taxes. The common attitude toward taxes for public and community services seems to be a blithe assumption that some mythical rich uncle, some magical pot of gold at the end of the rainbow, some Robin Hood who gallantly takes surplus gold and jewels from the wealthy to care for the poor, or perhaps the gold in the vaults of Fort Knox, provides an inexhaustible source of funds for the federal treasury. Nothing could be farther from the realities of the matter. Taxes are of necessity included in the prices of every common commodity the consumer buys, whether they are levied as taxes on corporate income, manufacturers' excise taxes, state and city sales taxes, or property and income taxes.

On a $2500 automobile, for example, taxes account for $599 of the retail price. It is estimated that $150 goes for taxes on materials, parts, and their transportation before they are received by the auto manufacturer. Taxes paid by the manufacturer, exclusive of the federal excise tax, may run to $137. The federal excise tax, including tax on radio and heater, will run around $182. Add $42 for the dealer's property, income, and other taxes; the state sales tax, which in Michigan would amount to $75; license plate and title on the car, $12.75; the federal excise and state sales tax on five gallons of gasoline and six quarts of oil, 68 cents. The grand total comes to $599.43, a sizable chunk of the total purchase price for the car.

It is an established but too little appreciated fact that a high percent of federal revenue from income taxes comes from the $6000-a-year-and-under income tax bracket. But with the public, or at least a very vocal section of it, demanding increased government subsidies for such items as schools, public welfare, unemployment, pensions, sickness and disability, health facilities, and highways, tax rates in the foreseeable future are not likely to be reduced, though the amounts that can be collected, with reduced employment and declining profits may well fall off a good deal.

(*Continued on page 18*)

Ratings of Motion Pictures

THIS SECTION aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:
Boxoffice, Cue, Daily News (N. Y.), *The Exhibitor, Films in Review, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, Newsweek, New York Herald Tribune, New York Times, The New Yorker, Parents' Magazine, Release of the D. A. R. Preview Committee, Reviews and Ratings* by the Protestant Motion Picture Council. *The Tablet, Time, Variety* (weekly).

The figures preceding the title of the picture indicate the number of critics whose judgments of its entertainment values warrant a rating of A (recommended), B (intermediate), or C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:
adv—adventure
biog—biography
c—in color (Ansco, Eastman, Technicolor, Trucolor, Warner Color, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
sci—science fiction
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
—	—	5	**Abductors, The**	*dr AYC*
—	4	3	**Adultress, The (French)**	*dr A*
—	9	7	**All at Sea (British)**	*com AYC*
—	1	6	**Ambush at Cimarron Pass**	*wes AYC*
—	3	12	**Another Time, Another Place**	*dr A*
—	—	3	**Astounding She Monster, The**	*sci AY*
—	1	3	**Attack of the Fifty Foot Woman**	*sci A*
—	3	5	**Attila (Italian)**	*hist-mel-c AY*
—	5	1	**Awakening, The (Italian)**	*dr AY*
—	2	2	**Badman's Country**	*wes AYC*
—	3	3	**Beast of Budapest**	*mel AYC*
—	2	11	**Beautiful but Dangerous (Italian)**	*mus-dr-c A*
—	1	5	**Bed of Grass (Greek)**	*dr A*
—	3	1	**Beggar Student, The (German)**	*mus-com-c AY*
—	2	1	**Big Barrier, The (German)**	*dr-c AY*
—	8	2	**Big Beat, The**	*mus-com AY*
—	2	2	**Bigamist, The (Italian)**	*com A*
—	5	6	**Bitter Victory (British)**	*war-mel AY*
—	2	6	**Blood Arrow**	*mel AY*
—	3	5	**Blood of Dracula**	*cri-mel AY*
—	3	1	**Blue Murder at St. Trinian's (British)**	*com AY*
—	7	8	**Bonjour Tristesse**	*dr-c A*
—	3	—	**Brain from Planet Arous, The**	*sci AY*
1	3	—	**Bravados, The**	*wes-c AY*
—	1	6	**Bride and the Beast, The**	*mel A*
—	4	5	**Bride is Much Too Beautiful, The (French)**	*com A*
10	5	2	**Brothers Karamazov, The**	*dr-c A*
—	3	—	**Bullwhip**	*wes-c A*
—	7	—	**Campbell's Kingdom (British)**	*mel-c AYC*
—	6	2	**Case Against Brooklyn, The**	*cri-mel AY*
—	4	5	**Cattle Empire**	*wes-c AY*
—	10	3	**Chase a Crooked Shadow**	*mys-mel AY*
—	6	—	**Cole Younger, Gunfighter**	*wes-c AYC*
—	4	5	**Confessions of Felix Krull, The (German)**	*nov A*
—	1	2	**Cool and the Crazy, The**	*soc-dr A*
—	1	2	**Cop Hater**	*cri-mel A*
—	9	2	**Count Five and Die (British)**	*war-mel AY*
5	8	4	**Cowboy**	*biog-c AY*
—	8	3	**Crash Landing**	*dr AYC*
—	2	1	**Crazy in the Noodle (French)**	*com A*
—	2	2	**Crooked Circle, The**	*mel AYC*
—	5	3	**Cross-Up (British)**	*mys-mel AY*
3	8	3	**Cry Terror**	*mys-mel A*
—	2	1	**Curse of the Demon**	*mel AY*
—	7	4	**Damn Citizen!**	*mel A*
—	1	2	**Dangerous Youth (British)**	*soc-mel AY*
1	9	7	**Darby's Rangers**	*war-mel A*
—	6	5	**Day of the Bad Man**	*wes-c AY*
—	2	2	**Deadly Decision (German)**	*war-dr A*
—	6	7	**Deep Six, The**	*war-dr-c AYC*
—	8	1	**Demoniaque (French)**	*mys-mel AY*
2	6	9	**Desire Under the Elms**	*dr A*
—	3	7	**Diamond Safari**	*mel A*
—	—	3	**Diary of a Bad Girl (French)**	*dr A*
—	2	3	**Dragstrip Riot**	*soc-mel A*
—	—	5	**Edge of Fury, The**	*cri-dr A*
—	3	7	**Escape from Red Rock**	*wes AYC*
5	4	8	**Farewell to Arms, A**	*war-dr-c A*
—	3	9	**Female Animal, The**	*dr A*
—	2	1	**Fiend Without a Face (British)**	*sci-mel A*
—	1	3	**Fighting Wildcats, The (British)**	*mel A*
—	2	4	**Flame Barrier, The**	*sci-mel AY*
—	9	1	**Flood Tide**	*dr AY*
—	2	2	**Folies Bergère (French)**	*mus-mel-c A*
—	5	4	**Fort Bowie**	*wes AY*
—	7	3	**Fort Dobbs**	*wes AY*
—	4	1	**Fort Massacre**	*mel-c AYC*
1	6	4	**Fraulein (German)**	*war-dr-c A*
2	8	—	**From Hell to Texas**	*wes-dr-c AYC*
—	2	3	**Gang War**	*cri-mel A*
—	8	2	**Gates of Paris (French)**	*dr A*
—	2	1	**Ghost of the China Sea**	*war-mel AYC*
—	2	1	**Giant from the Unknown**	*sci-mel A*
—	6	9	**Gift of Love, The**	*dr AYC*
6	8	—	**Gigi**	*mus-dr-c A*
—	3	2	**Girl in the Woods**	*cri-mel A*
—	8	2	**Girl Most Likely, The**	*mus-com-c AYC*
—	—	10	**Girls on the Loose**	*cri-mel A*
—	5	5	**Goddess, The**	*soc-dr A*
1	4	6	**God's Little Acre**	*dr A*
—	5	4	**Going Steady**	*com A*
—	8	—	**Golden Age of Comedy**	*doc AYC*
—	1	2	**Golfo (Greek)**	*dr A*
—	1	7	**Gun Fever**	*wes A*
—	—	5	**Gunfire at Indian Gap**	*wes AY*

A	B	C		
—	4	4	**Handle with Care**	*dr AYC*
—	3	—	**Haunted Strangler, The (British)**	*cri-mel A*
—	4	2	**Hell Drivers (British)**	*mel A*
—	1	3	**Hell Ship Mutiny**	*mel AYC*
—	5	1	**Hell's Five Hours**	*mys-mel AY*
1	10	2	**High Cost of Loving, The**	*com A*
—	4	5	**High Flight (British)**	*war-dr AYC*
—	3	7	**High Hell**	*mel A*
—	2	10	**High School Confidential**	*soc-mel A*
—	1	3	**Hong Kong Affair**	*mys-mel AYC*
1	7	1	**Horror of Dracula (British)**	*mel-c A*
1	3	2	**Hot Spell**	*dr A*
3	9	3	**I Accuse (British)**	*dr AY*
—	5	2	**I Married a Woman**	*com AY*
—	2	8	**I Was a Teenage Frankenstein**	*mel AY*
—	1	2	**In the Money**	*com AY*
1	4	—	**Indiscreet**	*com-c A*
—	2	3	**Island Women**	*mus-mel A*
—	5	3	**It's Great to be Young (British)**	*mus-mel-c AYC*
—	2	5	**Jet Attack**	*war-mel A*
—	1	5	**Juvenile Jungle**	*cri-mel A*
1	5	—	**Kathy O'**	*com-c A*
—	2	3	**Key, The**	*war-mel A*
—	4	1	**King Creole**	*mus-mel A*
—	3	2	**Kings Go Forth**	*war-dr A*
—	8	5	**Lady Takes a Flyer, The**	*com-c A*
—	6	6	**Lafayette Escadrille**	*mel A*
—	5	4	**Last Paradise, The (Italian)**	*doc-c A*
—	3	2	**Law and Jake Wade, The**	*wes-c AYC*
—	1	2	**Lawless Eighties, The**	*wes AYC*
—	5	7	**Left Handed Gun, The**	*wes A*
1	5	8	**Legend of the Lost**	*adv-c AY*
—	4	2	**Let's Rock**	*mus-com AYC*
—	5	—	**Light in the Forest, The**	*hist-dr-c AYC*
—	1	2	**Lily of the Harbor (Greek)**	*dr A*
—	5	2	**Lineup, The**	*cri-mel AY*
—	—	9	**Live Fast, Die Young**	*cri-mel A*
—	3	—	**Lone Ranger and the City of Lost Gold, The**	*wes-c AYC*
3	9	5	**Long Hot Summer, The**	*mel-c A*
—	—	3	**Looking for Danger**	*com AYC*
—	1	6	**Lost Lagoon (British)**	*mel A*
—	4	6	**Lovemaker, The (Spanish)**	*dr A*
—	1	2	**Lucky Jim (British)**	*com AY*
—	2	3	**Macabre**	*cri-mel A*
—	1	8	**Mam'zelle Pigalle (French)**	*com-c A*
—	3	4	**Man from God's Country, The**	*wes-c AYC*
—	4	5	**Manhunt in the Jungle**	*doc-c AY*
—	5	—	**Maracaibo**	*mel-c A*
5	9	4	**Marjorie Morningstar**	*nov-c A*
2	5	6	**Mark of the Hawk, The**	*soc-mel-c AY*
2	4	—	**Matchmaker, The**	*com AY*
3	11	3	**Merry Andrew**	*mus-com-c AYC*
—	6	4	**Missouri Traveler, The**	*com-c AY*
—	4	4	**Mitsou (French)**	*com-c A*
—	1	3	**Mustang**	*wes AY*
—	2	1	**Naked Africa**	*trav-c A*
—	7	3	**Night Ambush (British)**	*war-mel AY*
—	1	3	**No Sun in Venice (French)**	*mel-c A*
1	8	3	**No Time for Sergeants**	*war-com AYC*
—	—	4	**Notorious Mr. Monks, The**	*mel A*
1	1	3	**Old Man and the Sea, The**	*dr-c AY*
—	8	3	**One that Got Away, The (British)**	*war-dr AYC*
—	5	2	**Ordet (Danish)**	*dr A*
—	4	4	**Oregon Passage**	*wes-c AY*
—	—	3	**Outcasts of the City**	*war-mel A*
—	4	5	**Panic in the Parlor (British)**	*com AY*
1	6	6	**Paris Holiday**	*com-c AY*
—	9	1	**Plunder Road**	*cri-mel AY*
—	2	2	**Poor but Beautiful**	*com A*
—	6	4	**Portrait of an Unknown Woman (German)**	*dr A*
3	6	—	**Proud Rebel, The**	*dr-c AYC*
—	5	1	**Quantrill's Raiders**	*wes-c AYC*
1	8	7	**Quiet American, The**	*war-dr AY*
—	6	2	**Return of Dracula, The**	*mel A*
—	2	9	**Return to Warbow**	*mel-c AYC*
—	4	—	**Robbery Under Arms (British)**	*mel-c AY*
—	3	2	**Rock-a-bye Baby**	*mus-com-c AYC*
—	5	2	**Rooney (Irish)**	*com A*
2	7	2	**Rouge et Noir (French)**	*dr-c A*
1	10	4	**Run Silent, Run Deep**	*war-dr AYC*
—	—	3	**Sabu and the Magic Ring**	*adv AYC*
1	9	5	**Saddle the Wind**	*wes-c AY*
—	12	3	**Safecracker, The (British)**	*war-mel AY*
—	2	9	**Screaming Mimi**	*cri-mel A*
1	8	6	**Search for Paradise**	*trav-c AYC*
1	10	3	**Seven Hills of Rome, The**	*mus-dr-c AY*
—	2	1	**She Played with Fire (British)**	*mys-mel A*
5	8	—	**Sheepman, The**	*wes-c AYC*
—	2	6	**Ship Was Loaded, The (British)**	*war-com AY*
—	4	1	**Showdown at Boot Hill**	*wes AY*
—	7	4	**Sing, Boy, Sing**	*mus-dr AYC*
—	8	3	**Smiles of a Summer Night (Swedish)**	*com A*
—	2	5	**Sorority Girl**	*mel A*
6	6	4	**South Pacific**	*mus-dr-c AY*
—	8	4	**Spanish Affair, The**	*dr-c AYC*
—	6	9	**St. Louis Blues**	*mus-biog AYC*
2	10	6	**Stage Struck**	*dr-c A*
—	6	3	**Stakeout on Dope Street**	*soc-mel A*
—	2	4	**Steel Bayonet (British)**	*war-mel A*
—	10	5	**Story of Vickie, The (Austrian)**	*biog-c AY*
—	2	3	**Suicide Battalion**	*war-mel AY*
—	7	1	**Summer Love**	*mus-com AY*
2	10	5	**Teacher's Pet**	*com A*
—	2	1	**Teenage Bad Girl (British)**	*dr AY*
—	—	4	**Teenage Monster**	*sci AY*
—	—	4	**Teenage Wolf Pack (German)**	*mel A*
5	4	7	**Ten North Frederick**	*dr A*
—	3	2	**Thing That Couldn't Die, The**	*cri-mel A*
—	4	6	**This Angry Age**	*dr-c A*
—	7	—	**This Happy Feeling**	*com-c AYC*
—	4	3	**Thunder Road**	*cri-mel A*
—	3	2	**Thundering Jets**	*war-dr AYC*
—	3	1	**Time is My Enemy (British)**	*cri-mel AYC*
1	4	1	**Time to Love and a Time to Die, A**	*war-dr-c A*
—	4	7	**Too Much, Too Soon**	*biog A*
—	5	8	**Touch of Evil**	*mel A*
—	2	4	**Toughest Gun in Tombstone**	*wes AYC*
—	6	5	**True Story of Lynn Stuart, The**	*cri-mel AY*
—	6	4	**Uncle Vanya**	*dr A*
—	—	6	**Undersea Girl**	*cri-mel A*
—	1	3	**Up in Smoke**	*com AYC*
3	6	4	**Vertigo**	*mys-mel-c AY*
—	—	3	**Vicious Breed, The (Swedish)**	*soc-mel A*
—	—	3	**Viking Women and the Sea Serpent**	*adv AY*
1	4	2	**Vikings, The**	*hist-dr-c A*
—	3	4	**Violent Road**	*mel AY*
—	5	—	**Voice in the Mirror**	*soc-dr AY*
—	1	2	**War of the Satellites**	*sci AY*
—	2	2	**Wife for a Night (Italian)**	*mus-dr A*
7	2	1	**Windjammer**	*trav-c AYC*
—	1	2	**Wink of an Eye**	*mys-mel A*
—	1	2	**Wolf Dog**	*mel AYC*
—	6	5	**World Was His Jury, The**	*mel AYC*
—	3	3	**Young and Wild**	*soc-mel A*
5	6	6	**Young Lions, The**	*war-dr A*

The Consumers' Observation Post

(*Continued from page 4*)

AMATEUR ROCKETRY is an atomic age version of old-fashioned fireworks. It is undoubtedly the loud bang that attracts teenagers and not scientific knowledge to be gained by experimentation, according to Charles S. Morgan of the National Fire Protection Association. Mr. Morgan pointed out in a speech last spring that in a six weeks' period ending April 15, 1958, some 175 persons, nearly all teenagers, had been injured in amateur rocketry experiments. The preparation of rocket fuels, loading of rockets, and their discharge are such dangerous operations that they should not be undertaken by anyone except an expert. Mr. Morgan emphasized that an expert is a rocketry professional, not a high school science teacher. The Model State Fireworks Law in effect in many states is being used by a number of fire marshals to control amateur rocket firings.

* * *

APPLIANCE SERVICING is not only a headache but something of a mystery to many consumers. The Buffalo Better Business Bureau is working on a pamphlet designed to explain what consumers have a right to expect from servicemen, dealers, and manufacturers. The B.B.B. makes the point that the warranty with the major appliances provides for repair and replacement of parts during the specified period but it does not necessarily include labor or service charges required to replace defective parts. It recommends that arrangements for service be made with the dealer from whom the appliance is bought since service is not always included in the purchase. The Buffalo Bureau offers to provide callers with a report on the reliability of servicing of any dealer, and no doubt Bureaus in other parts of the country will provide such reports in due course, where they are not already doing so.

* * *

PETS ARE SOMETIMES A SOURCE OF DANGER to children from bites and disease, but H. A. Carithers writing in a medical journal suggests that the emotional and educational value of pets outweighs the danger of bites and disease. He advises, however, that children should not own pets until they can care for them and show discretion in their handling. Older animals are to be preferred to immature ones as pets for young children. He recommends teaching children that animals have rights including an existence free of pain and excessive teasing. In early years, children should be taught to avoid strange animals, and they should not trespass or take walks where dogs are known to chase people.

* * *

AUTOMOBILES ARE STOLEN in the United States at the rate of something like one every 2-1/3 minutes. To alert car owners to the problem, the National Automobile Theft Bureau has put out a little pamphlet of advice on how to avoid being an easy victim for car thieves. First of all, never leave the key in the ignition lock. In addition, don't park on dark side streets; don't leave bulky packages or clothing in your car; and be sure you know where your duplicate car keys are. It will be useful to have the following information in your wallet and on file at home: the make of your car, year, model and color, license number, motor number (from the engine block), serial number if different from the motor number (usually found on the left front pillar post), tire numbers, and any identifying marks such as those you may wish to put on your hubcaps, fender skirts, and battery to identify them. The good news is that nine out of ten stolen cars eventually find their way back to their owners.

* * *

HOUSEHOLD CHEMICALS are so numerous and in some cases so potentially hazardous that present laws and regulations inadequately provide for warnings on the label. The American Medical Association has drafted a model for uniform laws to require the declaration of hazardous ingredients and warning statements on the labels and accompanying literature of a wide

range of chemical products. It defines hazardous substances as those which are toxic, irritating, sensitizing, corrosive, flammable, explosive, or radioactive under customary or reasonably anticipated conditions of handling and use. The model act also includes a new class of products not hitherto considered in label legislation that may cause an inflammatory reaction on contact. These chemicals are known as strongly-sensitizing materials. The term "poison" has been omitted and the degrees of toxicity are to be reflected through the use of signal words "danger," "warning," or "caution" to indicate the degree of hazard. Information about the provisions of the bill may be obtained from Bernard E. Conley, Secretary, American Medical Association Committee on Toxicology, 535 N. Dearborn St., Chicago 10.

* * *

BUYING AN AUTOMOBILE on a time-payment basis involves a number of pitfalls. The overcharges in financing automobile purchases run into the millions of dollars. The Better Business Bureau and the National Automobile Dealers Association are working to expose the hidden "packs" in the prices of automobile dealers which take their toll from unsuspecting purchasers in the form of overcharges in the sale of automobile collision insurance by some finance company-controlled insurance companies. These concerns have charged the substantially higher insurance rates for drivers under 25 years of age in writing policies for thousands of individual car purchasers who have no such young drivers in their households. Other abuses include lumping together the charges for insurance and non-insurance items so that the buyer cannot eliminate coverages which he may already have or eliminate items which he does not wish to pay for. The Association of Better Business Bureaus believes that nearly 25 million dollars should be refunded to American car buyers for overcharges on their insurance policies purchased through auto financing companies.

* * *

MEDICATION USED IN WEIGHT REDUCTION is aimed at decreasing the appetite, improving the sense of well-being, increasing energy, and mood elevation in spite of food withdrawal. These objectives were studied by Dr. Robert H. Barnes of Seattle in 93 overweight patients using phenmetrazine hydrochloride. He found that about four times as much weight was lost while the patients took this drug as when they took a placebo (a harmless non-medicated pill). It was his conclusion that a majority of the overweight patients reduced more satisfactorily when taking a medicament which tended to offset the characteristics of the semistarvation neurosis. He also found that moderate exercise such as a brisk walk of half an hour night and morning was helpful. The drug administered possessed a low incidence of undesirable side-effects in the patients studied.

* * *

FUR FABRICS are often attractive when new. They are warm and light, but what they will look like after they have been dry cleaned is another matter. The National Institute of Drycleaning reports four current problems with various types of fur-like pile fabrics: certain types of Orlon pile coats become stiff after dry cleaning, and shrink; in a lightweight 100 percent rayon fur-type pile fabric striped to resemble mink, the pile became disturbed and would not lie in one direction; in another case, after cleaning, there were dye stains on the coat lining. The purchaser of such coats should make certain that the store will accept for full credit any fur-fabric garment that cannot be satisfactorily dry cleaned by a competent cleaner. Preferably select a garment that carries a hang tag with clear instructions on how the garment is to be cleaned, and take this tag to the cleaner for his information. Such a garment will turn out to be more expensive on a per-year basis than a real fur coat if it must be discarded after it becomes soiled because it cannot be dry cleaned satisfactorily.

Phonograph Records

BY WALTER F. GRUENINGER

Please Note: The first symbol applies to quality of interpretation, the second to fidelity of recording.

Beethoven: *Concerto No. 5.* Firkusny (piano) with the Pittsburgh Symphony under Steinberg. Capitol PAO 8419. $4.98. Firkusny plays the great "Emperor" with more attention to detail and lyricism than most pianists. My own preference, though, is for the playing heard on Decca DL 9741 with Kempff and London LL 879 with Backhaus. Steinberg provides fine support for Firkusny. **A AA**

Beethoven: *Variations on a Theme by Diabelli.* Serkin (piano). Columbia ML 5246. $3.98. Beethoven's last major work for the piano—monumental, but only for the "advanced listener." Serkin has rarely played with more depth and technical brilliance. Excellent recording. Best disk of this work. **AA AA**

Bernstein: *Trouble in Tahiti.* Wolff, Atkinson, etc., under Winograd. MGM E 3646. $3.98. Lightweight opera in seven scenes that stems from the American musical theater. Leonard Bernstein has written more original, complex, skillful music since 1952 when this work was first produced. It was revived by the New York City Opera Company this season. The cast and production are so good one wishes for more from the same source. Close-in recording, with nearly every word easily understood. **AA AA**

Brahms: *Haydn Variations* & **Schubert:** *Unfinished Symphony.* Berlin Radio Symphony Orchestra under Fricsay. Decca DL 9975. $3.98. One of Brahms' great works coupled with the ever popular "Unfinished." The playing strikes me as above average, though not definitive. The sound is similar to that heard from a seat in the rear of Carnegie Hall. **A A**

Brahms: *Symphony No. 3* and *Academic Festival Overture.* Philharmonia Orchestra under Klemperer. Angel 35545. $4.98. Lyric, but somewhat ponderous, performance of this lovely symphony and collegiate overture. The players are expert and the recording offers the atmosphere of the concert hall. **A AA**

Buxtehude: *Complete Organ Works*—Vol. 6. Alf Linder (organ). Westminster XWN 18689. $4.98. Buxtehude was the most distinguished master of the organ before Bach. This disk offers two chorale fantasias, a toccata, and three chorale variations. Arresting, beautiful music, simpler than Bach, masterfully played by the permanent organist of Stockholm's largest church. Clear recording, with just enough depth. **AA AA**

Copland: *Billy the Kid* and *Rodeo.* Morton Gould and His Orchestra. RCA Victor LM 2195. $4.98. Western ballets by a contemporary composer who knows how to write for them. Spirited performance brilliantly recorded. **AA AA**

Dvorak: *Symphony No. 4* and *Scherzo Capriccioso.* Hallé Orchestra under Barbirolli. Mercury MG 50162. $4.98. Seldom heard works, conservative in compositional matters, melodiously attractive. Played with abundant energy and illumination. Clear, brilliant sound. Overall, first choice of these works on LP. **AA AA**

Granados: *Goyescas.* Eduardo del Pueyo (piano). Epic LC 3444. $3.98. Attractive miniatures, which later served as the basis of an opera, exquisitely played and well recorded. **AA AA**

Handel: *Israel in Egypt.* Christensen, Bischoff, Bumbry, Blackburn, etc., with the combined choruses of the University of Utah and the Utah Symphony under Abravenel. 4 sides, Westminster XWL 2224. $10.95. The first American recording of this oratorio, not heard often today. Principally it is a series of choruses. The soloists are adequate but the chorus and orchestra carry the show. Fairly well directed and recorded. **A A**

Handel: *Water Music Suite* (arr. Harty) and *Music for the Royal Fireworks.* London Symphony Orchestra under Dorati. Mercury MG 50158. $4.98. Some of Handel's finest orchestra writing appears on this disk. Dorati comes close to realizing all the nuances and splendor. Robust, in-depth, very satisfactory recording. **A AA**

Mozart: *Concerto in A Major for Clarinet and Orchestra* and *Concerto in C Major for Flute, Harp and Orchestra.* De Wilde, Barwahser, Berghout with the Concertgebouw Orchestra under van Beinum. Epic LC 3456. $3.98. The clarinet concerto was the last of Mozart's concertos for any instrument. It's an engaging work, played with distinction. Overside is a piece of less importance which suggests French salon music at its best, played with imagination. Admirable recording. **AA AA**

Strauss: *Alpine Symphony.* Saxon State Orchestra under Böhm. Decca DL 9970. $3.98. The last of Strauss' tone poems but not his best. The score calls for 135 players and so many are difficult to record well. The engineers don't fully succeed. Hats off, though, to the performance. Best disk of this work **AA B**

Strauss: *Don Juan, Death and Transfiguration, Till Eulenspiegel.* Cleveland Orchestra under Szell. Epic LC-3439. $3.98. Chances are the sound may have been improved with two pieces on the disk, instead of three. Performances are crisply articulated, uniformly good though not great. . . .Performances of *Till* and *Don Juan* (plus *Rosenkavalier Suite*) are better, and so is the recording, on the new Rodzinski-Westminster XWN 18680. **A A**

Tchaikovsky: *Swan Lake Excerpts.* Royal Opera House Orchestra under Morel. RCA Victor LM 2227. $4.98. Very likely this is the most popular Tchaikovsky ballet of our time due, in part, to its pleasant tunes. This group of excerpts is played as well as the best in the Schwann catalog and the recording is rich. **AA AA**

Villa-Lobos: *Bachianas Brasileiras Nos. 2, 5, 6, 9.* Orchestre National de la Radiodiffusion Francaise under the Composer with Victoria de los Angeles (soprano). Angel 35547. $4.98. Among the most interesting items of the month. These suites in the style of Brazilian folklore were written in homage to Bach. Unique, delightful. The performance could hardly be surpassed. Good, clear sound. **AA AA**

* * *

Brass in Hi-fi. Jean-Marie Leclair Instrumental Ensemble under Paillard. Westminster XWN 18664. $4.98. Pieces by Alberti, Bononcini, Jacchini, Torelli from the 18th century. Charming music in which the brass, playing against the small group of strings, gives the album its title. The group is well rehearsed, the brass players are expert and the recording is first rate except for some faulty balance. Off the beaten path and exciting. **AA A**

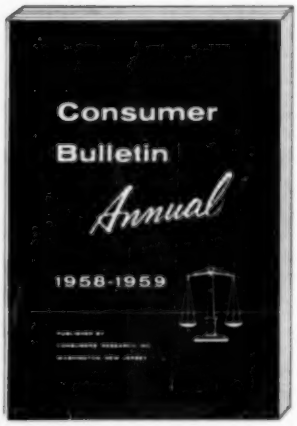
Dance Time in Hi-Fi. Howard Lanin and His Orchestra. Decca DL 8698. $3.98. You'll find 30 selections here, nearly all standards, played as society music by 30 musicians. Included are "Steppin' Out with My Baby," "Who," "Little Brown Jug," "El Vigo," "Rosalie," etc. Robust recording. **AA AA**

French Chansons and Dances of the 16th Century. Pro Musica Antiqua under Cape. Period SPL 738. $4.98. Instrumental and vocal music of another age. Its charm and naiveté made it a high spot in one evening's listening to new disks. Very well sung and recorded. **AA AA**

Marcel Dupré Organ Recital. Mercury MG 50169. $4.98. Included are pieces by Widor and Dupré. Much of it is dramatic, loud—letting the organ fill the room with glorious sound. The recording is excellent, the playing marvelous. **AA AA**

The Reiner Sound. Chicago Symphony under Reiner. RCA Victor LM 2183. $4.98. Included are "Rapsodie Espagnole," "Pavan for a Dead Princess," "Isle of the Dead." All played with magnificent breadth. The recording is not the best Victor has done. **AA A**

Ready next month ↓



This guide to quality and economy for thrifty shoppers will provide a compact summary of product ratings and practical advice to help you choose among many competing brands.

Use the handy order blank on page 28 to make certain of getting a copy of the 224-page 7-3/4 x 10-1/2" Annual Bulletin as soon as it is off the press.

COMING IN FUTURE BULLETINS

Combination storm windows and screens

Gas and electric clothes dryers

Blackstone	Hamilton	Philco-Bendix
Caloric	Hotpoint	RCA Whirlpool
Easy	Kelvinator	Speed Queen
Frigidaire	Maytag	Westinghouse
	Norge	

Polaroid cameras

Domestic oil burners

Ratings of low-pressure atomizing burners and vertical rotary burners

High-power amplifiers

Bogen	Fisher	Heathkit
Dynakit	H. H. Scott	McIntosh

Automobile tires

Nylon versus rayon cord tires

Consumer Bulletin

The pioneer consumer magazine, testing and reporting on products since 1928.

Published by Consumers' Research, Inc., Washington, New Jersey.